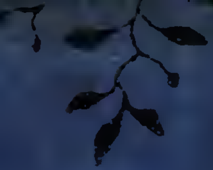

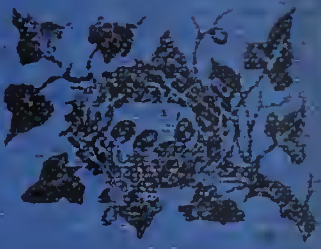

BIRDSNESTING and BIRD SKINNING

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BIRDSNESTING AND BIRD-SKINNING

BIRDSNESTING

AND

BIRD-SKINNING

A COMPLETE DESCRIPTION OF THE NESTS AND EGGS OF BIRDS WHICH BREED IN BRITAIN

BY

EDWARD NEWMAN

SECOND EDITION.

REVISED AND RE-WRITTEN, WITH DIRECTIONS FOR THEIR COLLECTION AND PRESERVATION; AND A CHAPTER ON BIRD-SKINNING, &c.

BY

MILLER CHRISTY

London
T. FISHER UNWIN
26 PATERNOSTER SQUARE
1888

"It wins my admiration
To view the structure of that little work,
A bird's nest. Mark it well, within, without;
No tool had he that wrought, no knife to cut;
No nail to fix; no bodkin to insert;
No glue to join; his little beak was all,
And yet how neatly finished! What nice hand
With every implement and means of art,
And twenty years' apprenticeship to boot,
Could make me such another? Fondly then
We boast of excellence whose noblest skill
Instinctive genius shames."

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PREFACE

TO THE FIRST EDITION, ABRIDGED.

In preparing these notes for the press, I have kept one object constantly in view, and that is utility. It is a very difficult task entirely to exclude the ornamental, whilst carefully retaining all that is useful, especially on such a subject as birdsnesting, where the mere mention of a name often calls up a host of recollections that require nothing more than a little word-painting to render them attractive to every reader. But this difficult and self-denying task I have achieved, in the belief that the better class of schoolboys who will make this little book the companion of their half-holiday rambles, will open it for information only.

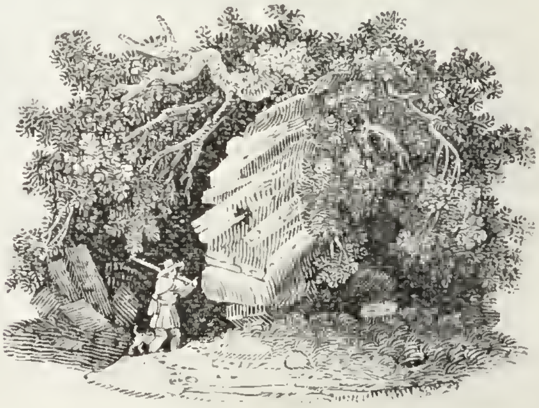
In many birds the range of variation in the colour of the eggs is so great that it is difficult to give any definition which shall be sufficiently comprehensive to include them all ; in such cases I have only noticed the more remarkable varieties, as in the tree pipit. The nest of this bird, as well as that of its congener, the meadow pipit, is built on the ground, and the two species use very nearly the same materials. The birds themselves are also nearly alike, and both are familiarly known by the name of "Titlark ;" so that, even after taking infinite pains, it is difficult to avoid confusion in naming the eggs of these two birds ; the eggs of the meadow pipit, however, vary but little. Again, in two closely-allied species, the guillemot and Brunnich's guillemot, the diversity of colour appears almost endless, and each bird produces the same variations, or nearly so.

On the subject of authority great care should be taken not to place implicit credence in any author's description, as almost every one has committed grave errors: for instance, Mr. Selby describes the nest of the sedge warbler as suspended between reeds in the same manner as that of the reed wren; Mr. Yarrell says it seldom depends on reeds for support; Mr. Hewitson says it is occasionally found among reeds, like that of the reed wren, but in a less elevated position. Thus the first of these accomplished authors makes a very great mistake, to which the second and the third only give a modified correction: the bird rarely frequents reeds, and never suspends its nest amongst them.

On this and all questions of doubt or difficulty I have had the great advantage of the constant assistance of Mr. Bond and Mr. Doubleday, than whom this country has never produced more accomplished ornithologists or gentlemen who practically understand our British birds so well.

In conclusion, I would particularly recommend that in every case where it is practicable the nest as well as the eggs should be preserved. I use the expression "practicable," because I am well aware that the nests of our larger birds can only be preserved where there is no restriction on the score of space; but among our smaller birds no such objection exists, and nothing is more easy than to preserve these lasting monuments of "instinctive genius."

1861. EDWARD NEWMAN.



PREFACE

TO THE SECOND EDITION.

THE present volume, although based in the main on the work of the late Edward Newman, has been subjected by me to such a complete revision that it is in reality a new work, and contains about three times as much matter as the original. For my own work, I claim neither originality nor high scientific value. These are not, in my opinion, required in such a work; but no trouble has been spared to secure perfect accuracy. During the compilation of the work, I have gathered information from many standard authorities, chief among which I may mention Mr. Henry Seebohm's "History of British Birds" (1883-85)—in my opinion by far the best work on the subject which has yet appeared. The descriptions of eggs given, though largely taken from published works, have been very carefully compared with specimens in my own or in Mr. Henry Seebohm's magnificent collection, and I desire here to express my great indebtedness to that gentleman. I am also under great obligations to Mr. J. E. Harting, who has most kindly read the proofs, and has made many valuable suggestions. Of my own experience as an oölogist, I may say that, having been born and brought up in the country, I have collected and studied Birds' Eggs since a period of my life to which my present memory does not extend. In carrying out the work of revision, it has been my endeavour, as it was that of the original author, to produce a first and elementary book on oölogy, rather than anything else—a book suited to the needs of the intelligent schoolboy rather than to those of the experienced ornithologist. With this object in view, the book has been made very low in price and of convenient size for the pocket.

The alphabetical arrangement has been adopted because it is believed that it will be found much more convenient in practice than a scientific arrangement. Its adoption renders an index unnecessary.

Regarding the scientific nomenclature used, I have adopted that of the "List of British Birds," compiled by a Committee of the British Ornithologists' Union in 1883. This list, though unsatisfactory in some respects, should, in my opinion, be regarded as the standard authority, inasmuch as it is the joint work of several of our best ornithologists, and has been officially adopted by the Union. It is obviously, therefore, of greater weight than a list compiled by any single person. The present unsettled and unsatisfactory state of scientific nomenclature has been long enough a disgrace to men of science.

It has not been thought necessary to insert the innumerable local names by which the species are known in different parts of the country : these would have largely swelled the size of the volume, without proportionately increasing its usefulness.

That the original work was very carefully compiled, is shown by the fact that the author, in speaking of the "observations, emendations, and additions" contributed by Mr. Bond and Mr. Henry Doubleday, stated that :—"With the view of making this work as complete as possible, these two gentlemen, our best British ornithologists, have gone over the list, species by species, and in a manner deserving the warmest and most sincere thanks of all lovers of birds, have corrected whatever they thought erroneous, erased whatever they considered doubtful, and added whatever they believed necessary to make the list complete."

The information relating to the comparative rarity, &c. of the species, their distribution during the breeding season, the hints on collecting and preserving eggs and skins, and the abstract of the Wild Birds Protection Acts, are new features which I have added to the work.

Chelmsford, March, 1888. MILLER CHRISTY.

EXPLANATIONS.

THE information relating to each species is divided into four paragraphs or sections, giving—

(*a*) The most frequent English name of the species; the scientific name; the other English name or names (if any) by which the species is also commonly known; and, lastly, such information as has been deemed necessary concerning the distribution, habits, and relative abundance of the species in question;

(*b*) The situation in which the nest may be found;

(*c*) The materials of which it is usually constructed;

(*d*) Particulars as to the eggs; including the usual number in a clutch (that is, all the eggs laid by a bird for one sitting); the maximum and the minimum measurements of different specimens in inches and decimals (thus, 4·7-5·1 × 2·8-3·1), both of the length and breadth; the colouring and other particulars; the time of year during which eggs are usually found; and in most cases the number of broods usually reared in a season—that is, when the birds are undisturbed, for when the first clutch is taken, there are but few species that will not lay again, at least once. The word "Distinct" following the description of any particular egg, indicates that those of the species in question can hardly be confused with the eggs of any other species breeding in Great Britain and Ireland.

BIRDSNESTING.

ACCENTOR, HEDGE, *see* HEDGE-SPARROW.

AUK, GREAT : *Alca impennis.*

It formerly bred on St. Kilda, and perhaps on some other northern islands, but as it is now certainly extinct everywhere, it seems almost useless to speak of it.

Situation. On the sea shore, a few yards from the water's edge.
Materials. None.
Egg. 1 ; 4·7-5·1 × 2·8-3·1. Creamy white, more or less spotted and blotched (or occasionally streaked) with dark rich brown or black, and with underlying grey markings. The value of one of these eggs, of which only about seventy are known to exist, is about £150. Distinct.

BITTERN : *Botaurus stellaris.*

Now only a rare straggler to Britain, but once a common resident, before the draining of the extensive marshes which it inhabited. It is hardly likely that it will ever again breed in this country.

Situation. On the mud in extensive reed beds.
Materials. Dead flags and reeds, carelessly heaped together.
Eggs. 3—5 ; 1·97-2·15 × 1·45-1·55. Uniform dull brownish-olive. Distinct. April and May.

BLACKBIRD : *Turdus merula.*

An abundant and well-known resident in all cultivated and wooded districts of Great Britain and Ireland.

Situation. Bushes and trees of all kinds; sometimes the nest is placed at a considerable height, but it is generally within a few feet of the ground; and, as the bird is an early breeder, evergreens, such as laurel, holly, ivy (on a wall or tree-trunk), or box, growing in gardens or shrubberies, are usually selected for the sake of shelter; not unfrequently the nest is placed nearly or quite upon the ground, at the base of a tree trunk, among bracken, on the side of a ditch, or beneath a small sheltering bush; very curious sites are sometimes chosen, thus it is recorded that a blackbird once built its nest within that of a magpie, and nests are sometimes found beneath the eaves of sheds.

Materials. Coarse twigs, roots, leaves, moss, and bents, plastered with mud, and thickly lined inside with fine grasses.

Eggs. 4—6, occasionally 7; 1·0-1·35 × 0·79-0·9. Bright greenish-blue ground-colour, spotted, streaked, blotched, or sprinkled with light-brown or reddish-brown, tinged with purple; sometimes the markings are uniformly distributed, at other times they are confined chiefly to the larger end. It is not very unusual to find unspotted examples of a uniform greenish-blue. The first brood is often hatched by the end of March, and others are afterwards reared.

BLACKCAP: *Sylvia atricapilla.*

A common summer visitor; less frequent in Scotland and Ireland than in England.

Situation. In nettles, brambles, or low hedges, generally near the ground, but never on it; generally in secluded shrubberies, tangled thickets, or gardens.

Materials. The dried stems of the goose-grass or "cleavers," fibrous roots, &c.; bound together with spiders' webs, and lined with fine rootlets and hair; a frail but not untidy structure.

Eggs. 5—6; 0·71-0·84 × 0·54-0·69. At least two well-marked variations occur; the first (which often very closely resembles the egg of the garden warbler, but is, as a rule, more richly coloured) has a dirty-white ground-colour, clouded and marbled with yellowish-brown, and with spots or streaks of a dark brown; the other, which is more rare, has a pale brick-red ground, thickly spotted or blotched with a much darker shade of the same, and sparingly marked with fine spots or streaks of a rich purplish-brown; pure white eggs have been known. May; only one brood probably is reared.

BULLFINCH: *Pyrrhula europaea.*

A resident throughout the British Isles, except in the extreme north, though nowhere especially common.

Situation. In woods, dense thickets, and the thickest thorn hedges; sometimes among the branches of a small fir-tree.

Materials. Chiefly small twigs, bound together with fibrous roots, and lined with finer rootlets; occasionally a little wool or a few feathers.

Eggs. 4—5, sometimes 6; 0·7-0·85 × 0·55-0·6. Greenish-blue (less dark than on the eggs of the Hedge Sparrow, yet darker than on those of the Wheatear), speckled, spotted, and sometimes more or less streaked with dark purplish-brown, and with larger and paler spots of pinkish-brown; the markings are generally thickest at the larger end; like, but considerably larger than, those of the Lesser Redpoll; bluer than those of any allied species with which they are likely to be confused; the female bird alone sits and will often allow herself to be stroked upon the back without leaving the nest. Distinct. April onwards; more than one brood is often reared.

BUNTING, CIRL: *Emberiza cirlus.*

A resident, but very local and not abundant. It breeds in most of the southern counties.

Situation. Generally in furze or some low bush; occasionally, but not often, on the ground.

Materials. Dried stalks, roots and a little moss, and lined with long hair and fibrous roots; sometimes without the hair.

Eggs. 4—5; 0·8-0·92 × 0·6-0·7. Dull white, tinged with bluish-grey, spotted, blotched and scribbled over with well-defined short lines of very dark-brown, almost black, with indistinct suffused patches of pale lavender. Of a bluer tinge and more distinctly marked than the eggs of the Yellow Hammer, which are the only British eggs for which they are likely to be mistaken. Distinct. Early in May.

BUNTING, COMMON, *see* BUNTING, CORN.

BUNTING, CORN : *Emberiza miliaria ;* also COMMON BUNTING.

A resident, or partial migrant, throughout the British Isles. It is widely distributed, though decidedly local and nowhere very abundant ; it often nests away from cornfields.

Situation. Among coarse grass, near to or on the ground ; often in a low bush.

Materials. Straw and coarse dry grass outside ; lined with fibrous roots, fine grass, and often a little horsehair.

Eggs. 4—6 ; 0·87-1·05 × 0·67-0·75. Dull purplish or brownish-white, blotched and spotted, but chiefly streaked or irregularly lined, with dark-brown, almost black ; there are often indistinct underlying markings of greyish-purple ; distinguishable by their size from the eggs of all other British Buntings. Distinct. May or June ; one brood only is said to be reared.

BUNTING, REED : *Emberiza schœniclus ;* also REED SPARROW.

A resident, though partially migratory. It is nowhere very abundant, though not uncommon in marshy situations throughout Britain.

Situation. On or very near the ground, under or in a tussock of sedge, or some coarse grass ; sometimes in a low bush ; always in moist, swampy localities.

Materials. Moss, dried grass, and leaves or stems of the reed, lined with fine grass, the flower of the reed, and horsehair.

Eggs. 4—5, sometimes 7 ; 0·68-0·85 × 0·54-0·6. Pale purplish-brown, boldly spotted and blotched, but chiefly streaked, with rich purplish-brown, almost black, and with sometimes indistinct underlying markings of purplish-grey; the streaks are thicker, much less hair-like and more regular than those on the eggs of the Yellow Hammer. Distinct. May and June; two broods are often reared.

BUNTING, SNOW: *Plectrophanes nivalis.*

Best known as a regular, though rather uncommon, winter visitor. It is often seen in large flocks, especially near the sea-coast. In Scotland it is commoner, and a few breed on the higher mountains in the Highlands and northern islands.

Situation. Among stones, crevices in rocks, on mountain-tops, and in desolate places.

Materials. Dry grass, rootlets, and moss, lined with feathers, hair, or down.

Eggs. 4—6, occasionally 8; 0·82-1·05 × 0·6-0·67. Dull white, tinged with pale greenish-blue, with patches of pale lilac, and with spots, blotches, and sometimes streaks, of deep blackish-brown, generally most numerous at the larger end; decidedly variable; sometimes very handsome. Distinct. June or July.

BUNTING, YELLOW, *see* YELLOW HAMMER.

BUZZARD: *Buteo vulgaris;* also COMMON BUZZARD.

Formerly an abundant resident throughout the British Isles, but now rare, except in wild, rocky, or densely-wooded districts. It still, however, breeds more or less regularly in the wilder parts of Wales and Scotland, though seldom or never in the eastern and midland counties of England.

Situation. Tall trees in extensive woods and forests; less often on rocky sea-cliffs.

Materials. Large sticks outside, smaller twigs (often of heather) inside, lined with leaves, dry grass, wool, &c.; a very large and flat structure.

Eggs. 2—3, sometimes 4; 2·0-2·32 × 1·58-1·86. White, faintly tinged with pale bluish or reddish, and blotched, streaked, spotted, and clouded with dull reddish-brown; very variable in colour and shape; not glossy; sometimes almost or quite unmarked; some specimens very closely resemble eggs of the Kite or Goshawks. April and May.

BUZZARD, COMMON, *see* BUZZARD.

BUZZARD, HONEY: *Pernis apivorus.*

A rare summer visitor, though it was formerly common, and bred in most well-wooded districts. It still appears from time to time on autumn migration, and breeds almost yearly in the New Forest and a few other places in England and Scotland; rare in Ireland.

Situation. Tall trees in thick woods or forests.

Materials. Large sticks outside, finer twigs inside, lined with leaves and wool.

Eggs. 1—3; 1·86-2·05 × 1·55-1·7. The ground-colour, which varies from creamy to pale reddish-white, is very thickly overlaid (and often quite obscured) with numerous spots, splashes, dashes, and specks of very dark red or rich chestnut-red, generally pretty evenly distributed; rounded in shape; smooth-shelled and glossy. May and June.

BUZZARD, ROUGH-LEGGED: *Archibuteo lagopus.*

A rare, though fairly regular, visitor in autumn and winter to most parts of Great Britain; rarer in Ireland. Instances of its having bred near Scarborough and near Banff are on record, and it is possible, though not very likely, that other cases may be brought to light.

Situation. Tall trees or almost inaccessible rocky cliffs.

Materials. Sticks and twigs, lined with dry grass; of large size.

Eggs. 2—5; 2·1-2·25 × 1·65-1·8. Dull dirty or bluish-white, more or less richly blotched and spotted with dark red or reddish-brown. May or June.

BRAMBLING: *Fringilla montifringilla.*

An irregular winter visitor, said (but on very unsatisfactory evidence) to have once or twice bred in Scotland.

Situation. Usually in a fork of one of the larger branches of a birch, spruce, or other tree; about ten or fifteen feet from the ground.

Materials. Dry grass, moss, and lichens, felted firmly together with cobwebs and thistle-down, and lined with fine grass and feathers; like that of the Chaffinch, but larger and less neat.

Eggs. 5—6, occasionally 7; 0·6-0·85 × 0·55-0·75. Pale bluish-green, washed or clouded with reddish-brown, sparingly streaked and spotted with very dark brown; very like those of the Chaffinch, but the ground-colour greener as a rule.

BURROW DUCK, *see* SHELDRAKE.

CAPERCAILLIE: *Tetrao urogallus.*

Formerly a common resident in northern England, in Ireland, and in Scotland. It became extinct in the last century, but was re-introduced in the years 1837–38, and is now common in Perth, Forfar, and other adjoining central Scotch counties.

Situation. A slight hollow scratched in the ground in a forest among heather or bilberries.

Materials. None, except a few blades of grass.

Eggs. 6—12, occasionally 15; 2·0-2·35 × 1·5-1·7. Pale reddish-yellow or brownish-buff, spotted and speckled with reddish-brown; exactly like those of the Black Grouse, but larger. Distinct. End of May and early June.

CHAFFINCH: *Fringilla cœlebs.*

An abundant resident.

Situation. Generally in forks of smaller branches of lichen-covered apple and other fruit trees in gardens and orchards, but also in other trees; often amongst gorse or in white-thorn hedges; sometimes in the ivy which clothes the trunks of trees.

Materials. Moss, lichens, and wool, interwoven into a most compact mass, and forming a beautiful and symmetrical object, always assimilating in colour to the site the bird has chosen; the lining is feathers and hair;

scraps of paper are not unfrequently used; our most exquisite English nest, next to that of the Long-tailed Tit.

Eggs. 4—5, occasionally 6; 0·7-0·8 × 0·55-0·65. Pale greenish blue, clouded with faint reddish-brown, so as usually to hide the ground-colour, and spotted and streaked (chiefly the latter, and generally most at the larger end) with a rich dark sienna-brown; occasionally pale greenish-blue, almost or quite unmarked; very like those of the Brambling, but not easily mistaken for those of any other British bird. March to June, two broods being usually reared.

CHIFFCHAFF: *Phylloscopus rufus.*

A common summer visitor, especially in England and Wales.

Situation. On or near the ground on hedge-banks, in woods, &c., seldom more than a foot from the ground.

Materials. Dead grass, leaves, and moss outside; a profusion of feathers in the interior; nearly spherical or oval, with a lateral opening; semi-domed.

Eggs. 5—6; 0·55-0·65 × 0·45-0·5. White, with a few dark purple-brown spots; sometimes the spots are fewer, larger, and lighter in colour; at other times they are merely minute specks; usually the spots are fewer, larger, and darker than those on the eggs of the Willow Wren. May or early June.

CHOUGH: *Pyrrhocorax graculus.*

A resident, though much less common than formerly, and now decidedly local, being at present almost confined to the higher cliffs on the sea-coast of the western and south-western counties, from Hampshire to the Hebrides; it also breeds on the coast of Berwickshire, the Channel Islands, and Ireland, but is everywhere decreasing. It is said formerly to have frequented many inland situations.

Situation. In crevices and holes in the face of rocky, precipitous sea-cliffs and in sea-caves; occasionally in holes in ruins.

Materials. Sticks, lined with dry grass, roots, and a great quantity of wool and hair.

Eggs. 4—5, sometimes 6; 1·4-1·65 × 1·0-1·15. Dirty white, spotted and blotched, more especially at the larger end, with raw sienna-brown and ash-colour; markings very variable.

COOT : *Fulica atra.*

A locally common resident, frequenting large sheets of water in most parts of the British Isles; probably decreasing in numbers through the draining of its former haunts.

Situation. On the ground or the surface of the mud or water in large reed-patches, or among reeds and other herbage on the margins of large lakes and ponds; often more or less floating,

Materials. Dead and decaying stems and leaves of reeds, rushes, sedges, and other water-plants, lined with similar materials, but finer and dry; often a bulky structure.

Eggs. 7—8, sometimes 12; 2·08-2·2 × 1·5-1·55. Dingy-buff or stone colour, speckled and spotted equally all over the entire surface with blackish-brown; the markings are always of small size. Distinct. May onwards; several broods are produced in a season.

CORMORANT : *Phalacrocorax carbo.*

A common resident around the British coasts, breeding in many suitable situations on the coast-line of all the four kingdoms and in not a few inland situations, as, for instance, on the "Bird Rock," near Towyn, in Merionethshire.

Situation. Generally on the ledges of sea-cliffs; often on ledges of rocky cliffs inland; sometimes in tall trees or bushes; occasionally on flat reefs of rock or low islands in lakes; large numbers generally nest in company, and the nesting-place has always about it a most intolerable stench, arising from the droppings of the birds.

Materials. Sticks, sea-weed, dead grass, &c.; a very large and high nest.

Eggs. 3—5, sometimes 6; 2·4-2·9 × 1·5-1·75. Pale blue-green, as may be seen when the empty shell is held up to the light, but always thickly encrusted with a whitish chalky substance; oblong in shape and equally pointed at both ends. Small specimens are quite indistinguishable from large eggs of the Shag. April and May.

CRAKE, BAILLON'S : *Porzana bailloni.*

A resident or summer migrant, although a very rare one. It has occurred occasionally in various parts of the United Kingdom, and has been known to breed in the Broad district of Norfolk, and in the fens of Cambridge.

Situation. Among reeds in fens and swamps.
Materials. Reeds, flags, grass, and other aquatic herbage ; a large but loosely-constructed nest.
Eggs. 5—6, sometimes 8 ; 1·1-1·2 × 0·8-0·9. Pale olive or buff, blotched and spotted with umber-brown and faint violet-grey. May or early in June.

CRAKE, CORN : *Crex pratensis ;* also LAND RAIL.

A common and widely-distributed, though somewhat local, summer visitant to the British Isles ; occasionally met with in winter, especially in Ireland.

Situation. On the ground in meadows ; sometimes in fields of standing corn ; generally in a slight cavity.
Materials. Dry grass and sometimes leaves, lined with fine grass.
Eggs. 7—9, sometimes 12 ; 1·36-1·5 × 1·02-1·1. Pale buffish or reddish-white, speckled, spotted, and freckled with reddish-brown and with underlying markings of ash-grey ; like those of the Water Rail, but larger and usually more thickly spotted ; the young are covered with silky brown down, and run as soon as hatched. End of May or June.

CRAKE, SPOTTED : *Porzana maruetta.*

A summer visitor, but decidedly local and uncommon. It is most often met with in marshes and swamps in the counties on the south and east coasts ; rarer in Ireland ; occasionally seen in winter.

Situation. On the wet ground, or on tussocks in bogs and marshes, generally so placed that the water permeates the lower part of the nest.
Materials. Flags, sedges, reeds, rushes, and other water plants ; often forming a very large mass, apparently

disproportioned to the size of the bird, but having a cup-shaped depression in the middle, which is dry, and neatly lined with the same materials, only finer.

Eggs. 8—10, sometimes 12; 1·2-1·4 × 0·9-1·0. Olive- or pale brownish-white, boldly speckled and spotted with two shades of reddish-brown and with underlying markings of ash-grey; their bold markings and the greenish tinge of the shell when held up to the light distinguishes them from the eggs of any other British Crake. Distinct, May or early June.

CREEPER: *Certhia familiaris.*

A fairly common resident in all well-wooded districts.

Situation. A hole in a tree; sometimes in a crevice in a building; oftenest in a hollow between the bark and the trunk of a decaying tree.

Materials. Twigs, portions of dead wood, strips of inside bark, dry grass, lined with moss, feathers and hair.

Eggs. 6—8; 0·58-0·7 × 0·45-0·5. White, spotted and speckled with reddish-brown, generally most at the larger end; they are indistinguishable from those of some of the Tits and Willow Warblers; in order to fully identify them, it is necessary to watch for the bird. April onwards; more than one brood probably is raised.

CROSSBILL: *Loxia curvirostra.*

An irregular and uncertain winter visitor, becoming common (but very locally) in some years. It has, nevertheless, been known to breed, from time to time, in most parts of England and Scotland, and occasionally in Ireland; in some of the central Scotch counties it may even be called a resident.

Situation. In fir-trees, sometimes within a few feet of the ground, and not unfrequently in the forks of lateral branches, but generally at the top of the tree, among the topmost branching twigs.

Materials. Fir twigs and a little dry grass, lined with finer grass and lichen, with a little hair or wool.

Eggs. 4, sometimes 5; 0·85-0·95 × 0·65-0·7. Creamy-white, often slightly tinged with very pale blue, sparingly spotted, speckled, and blotched with reddish-brown of two shades. February and March.

CROW, BLACK, *see* CROW, CARRION.

CROW, CARRION : *Corvus corone;* also BLACK CROW.

A well-known resident, though nowhere abundant and somewhat local. It breeds throughout the greater part of England, less often in Scotland, and still more rarely in Ireland.

Situation. In the forks of the main trunk of large trees in woods and plantations ; in hilly districts, on rocky cliffs ; abroad it has even been known to nest upon the ground.

Materials. Sticks, the larger outside, the smaller inside ; plastered with mud, clay, or cow-dung, and lined with wool, leaves, moss, hair, and other soft substances.

Eggs. 4—5, often 6 ; 1·5-1·8 × 1·1-1·3. Pale blue-green, more or less darkly and boldly blotched, spotted, or dashed with olive-brown and with underlying markings of ash-grey ; the intensity and distribution of the markings varies greatly ; they are generally thickest at the larger end, but sometimes equally distributed ; sometimes pale blue, almost, or quite, unspotted ; indistinguishable from those of the Hooded Crow, which is not specifically distinct from this species, as they interbreed indiscriminately, but larger than those of the Rook and smaller than those of the Raven, both of which they otherwise very closely resemble. April or May ; one brood only is reared.

CROW, GREY, *see* CROW, HOODED.

CROW, HOODED : *Corvus cornix;* also ROYSTON CROW and GREY CROW.

A common winter visitor to England and Wales, especially the eastern coast, though it has been known to breed occasionally. It breeds commonly in most parts of Ireland, Scotland, and the Northern Islands ; it cannot be regarded as specifically distinct from the Carrion Crow (*q. v.*) with which it freely interbreeds.

Situation. Trees and rocky cliffs; or, where these are scarce, in low trees and bushes, only a few feet from the ground.

Materials and Eggs. Precisely similar in every respect to those of the Carrion Crow.

CROW, ROYSTON, *see* CROW, HOODED.

CUCKOO: *Cuculus canorus.*

A common and very familiar summer visitor to all parts of the United Kingdom, including the Northern Islands.

Situation and Materials. None; the cuckoo makes no nest, but lays its eggs in the nests of other birds. The nests usually selected are those of the Pipits, Pied Wagtail, Hedge Sparrow, Redstart, Wren, and the Warblers, but the nests of many other species are known to have been occasionally chosen, and sometimes those of such unsuitable species as Jays and Pigeons.

Eggs. 5 are said, on good authority, to be laid in the course of one season; only one is found in a nest, though two have on rare occasions been discovered. 1·0-1.8 × 0·61-0·75. Very variable; usually pale greyish-green or reddish-grey, more or less closely mottled, spotted, and speckled with darker shades of the same colours; there can no longer be any question that as a rule the egg of the cuckoo is deposited in the nest of some species the eggs of which it resembles more or less closely, the parent bird no doubt exercising some discretion in the matter; the very small size of the egg in proportion to the size of the bird is, unquestionably, of great service in rendering the egg not very disproportionate in size from those of the small insectivorous birds with which it is usually deposited; nor can there longer be any doubt that the female cuckoo, after laying her egg upon the ground, takes it in her bill and deposits in the nest she has selected. End of May to middle of July.

CURLEW: *Numenius arquata.*

Common during autumn and winter on the entire coast-line of the British Isles. It breeds freely on many waste moors and hilly uplands of Scotland, Ireland, Wales, and the north, west, and south-west of England, but nowhere in the low-lying, highly-cultivated districts of the south and east of England.

Situation. A very slight hollow in the ground on open moorlands, generally more or less sheltered by a tuft or tussock of grass or rushes, or a clump of heather.

Materials. A few twigs of heather, dead leaves of grass, rush, or sedge, and sometimes a few dead leaves.

Eggs. 4; 2·45-2·8 × 1·75-1·95. Olive-brown, dark olive, or brownish-buff in ground-colour, blotched and spotted with reddish-brown, dark blackish-brown, and faint grey; the markings are generally uniformly distributed, but are sometimes confined chiefly to the larger end. Distinct. End of April or early in May; one brood only is reared.

CURLEW, STONE: *Œdicnemus scolopax;* also THICKNEE, GREAT PLOVER, and NORFOLK PLOVER.

A local summer visitor to the United Kingdom; gradually decreasing in numbers. It is little more than an accidental visitor to Ireland, Scotland, and most parts of England, but still breeds more or less commonly on the high downs and open warrens of the eastern and southern counties from Yorkshire to Essex, and from Kent westward to Wilts and Dorset, and extends inland as far as the counties of Buckingham, Oxford, and Berks.

Situation. On stony ground, on downs, commons, and warrens where the heath is short.

Materials. None, except sometimes a few grass bents placed in the slight hollow, scratched in the ground, which serves as a nest.

Eggs. 2; 2·0-2·2 × 1·49-1·6. Pale clay-brown or buffish-white, more or less boldly blotched, spotted, and streaked with dark-brown, and slightly with ash-grey; somewhat variable as to colouring; the eggs very closely resemble the stones among which they are usually laid; somewhat like those of the Oyster Catcher, but smaller and less boldly marked. May or June; one brood only is reared in a season.

DABCHICK, *see* GREBE, LITTLE.

DAW, *see* JACKDAW.

DIPPER : *Cinclus aquaticus;* also WATER OUZEL.

A common resident wherever there is an abundance of rushing, rocky mountain streams; rare in the south and east of England.

Situation. Banks of streams, caves, among rocks, underneath the arches of bridges, and in similar places; generally very well-concealed.

Materials. Moss firmly felted together, for the exterior, with dry leaves and a few feathers for the lining; of large size; domed; almost globular in form; with a central hole for the entrance and exit of the bird.

Eggs. 4—6; 0·95-1·1 × 0·7-0·77. White; semi-transparent; unspotted; not very glossy. April to June; two or more broods are reared.

DIVER, BLACK-THROATED : *Colymbus arcticus.*

A not uncommon visitor during winter to the entire coast-line of the British Isles, though less frequent on the south coast; very rare in Ireland. It has been found breeding not uncommonly in the Outer Hebrides and the south-west portion of Sutherlandshire, and also to a lesser extent in the counties of Argyle, Inverness, Perth, and Ross.

Situation. Round the edges of, or on small islands in, secluded lochs and mountain tarns, on the bare shingle close to the water's edge.

Materials. Plant stalks, reeds, and other water-plants, lined with grass.

Eggs. 1—2, generally the latter; 2·9-3·5 × 1·9-2·2. Dark olive-brown, rather sparingly spotted with dark umber-brown and black. The old birds themselves require to be seen in order to satisfactorily identify their eggs, as large or small specimens are indistinguishable from small eggs of the Great Northern Diver and large ones of the Red-throated Diver, respectively. Early in May.

DIVER, GREAT NORTHERN : *Colymbus glacialis.*

A common bird during winter on the coast all round the United Kingdom. It not improbably breeds on some of the secluded lochs on the western isles of Scotland, or on the main-land, but no undoubted evidence of its so doing has yet been obtained.

Situation. The edges of, or islands in, secluded lochs and mountain tarns.
Materials. Grass, reeds, and other water plants ; a large and untidy heap of materials ; very conspicuous.
Eggs. 2, occasionally, perhaps, 3 ; 3·4-3·8 × 2·1-2·4. Dark olive-brown, spotted with dark umber-brown, almost black ; abnormally small eggs are indistinguishable from eggs of the Black-throated Diver. June.

DIVER, RED-THROATED : *Colymbus septentrionalis.*

A tolerably common bird during winter on the coasts of the British Isles. It breeds commonly in many of the northern and western isles of Scotland and also on the main-land ; as well as occasionally in the west of Ireland.

Situation. The edges of secluded mountain lochs.
Materials. Generally none, except sometimes a scanty lining of water-weeds or sedge, placed in the depression in the ground in which the eggs are laid.
Eggs. 2 ; 2·5-3·1 × 1·7-1·9. Dark brownish-olive, often tinged with green, and spotted with dark umber-brown ; very variable in size ; large specimens are easily mistaken for small eggs of the Black-throated species. Mid-May to Mid-June.

DOTTEREL : *Eudromias morinellus.*

Best known in England as a passing migrant in spring and autumn, when it is not unfrequently met with, especially in the eastern counties. It used to breed on some of the most secluded mountains in the Lake District and some may still do so, but its chief breeding stations now are among the wildest and loneliest mountains of the Scotch Highlands.

Situation. On the ground, in wild moorland places.
Materials. None, the eggs being deposited in a slight hollow in the bare ground.
Eggs. 3 ; 1·5-1·75 × 1·1-1·17. Greyish-buff or yellowish-olive, very boldly and thickly blotched and spotted, generally most at the larger end, with rich, dark-

brown and faint inky grey; variable in shape; like one variety of the eggs of the Arctic Tern, but distinguishable by their fewer and smaller undermarkings. Distinct. June.

DOTTEREL, RINGED, *see* PLOVER, RINGED.

DOVE, RING: *Columba palumbus.*

An extremely abundant resident in all well-wooded districts of the United Kingdom.

Situation. In trees of almost every kind, especially firs, yews, and the like, generally on a horizontal branch near the main trunk; often in tall thorn or other bushes growing in hedge-rows, woods, or elsewhere; frequently in the crown of a pollard willow, in a situation somewhat resembling that often occupied by the Stock Dove; commonly in the ivy covering the trunks of trees or the face of rocks; a nest has been known to be built in a furze-bush; generally the tree selected grows in a wood, but it often stands in the open in the middle or at the side of a field, or in an orchard, shrubbery, or garden immediately joining a house—sometimes even on the outskirts of towns.

Materials. Small dead twigs; an almost flat nest, so slight that the eggs may generally be seen through the bottom of it.

Eggs. 2, very exceptionally 1 or 3; 1·55-1·7 × 1·15-1·35. Pure white; smooth and glossy; elongated and oval in shape, the two ends being almost equally glossy; very like those of the Rock Dove, but slightly larger as a rule. This bird may be found breeding in almost every month of the year—most commonly from March to July, but frequently from August to November; several broods are, therefore, probably reared.

DOVE, ROCK: *Columba livia.*

A resident throughout the whole of Great Britain and Ireland. It is rare in the eastern and southern counties of England, on account of the scarcity of breeding-stations suited to its habits, but is much commoner northwards, even as far as St. Kilda, wherever there are eaves or recesses in tall rocky cliffs. As a rule, it breeds only on the sea-coast, but some inland breeding-stations are known. There can be no doubt that Stock Doves, and even escaped Dovecote Pigeons—which have been produced from this species—have often been mistaken for Rock Doves, when breeding on rocky cliffs.

Situation. Ledges in rocky caves, or recesses in the face of tall cliffs ; generally on the coast.

Materials. A few sticks or twigs of heather, dry bents, grass and seaweed ; a very slight and flat structure.

Eggs. 2 ; 1·38-1·5 × 1·1-1·2. Pure white ; oval and almost equally pointed at both ends ; usually more rotund and slightly smaller than those of the Ring Dove. April and May are the principal breeding months, but eggs may often be obtained from February to October, so that several broods probably are reared.

DOVE, STOCK : *Columba œnas.*

A not uncommon, though local, resident in most parts of England and Wales. It is most abundant in some of the eastern and midland counties. In Scotland and Ireland it is only a very rare straggler.

Situations. Holes of all kinds in the trunks of trees ; often in the crowns of old pollard willows, elms, or other trees ; among ivy ; often in holes in rocky cliffs or old ruins, in which case there can be no doubt that this bird has often been mistaken for the Rock Dove. In open districts, it commonly breeds in rabbit-burrows, on the ground beneath thick furze-bushes, or in holes in heaps of turf ; the bird suits its nesting habits to its surroundings.

Materials. Often none, the eggs being laid upon the scraps of rotting wood in trees, or upon the bare ground when the nest is in rabbit-holes or beneath furze-bushes.

Eggs. 2 ; 1·4-1·5 × 1·13-1·2. White, slightly creamy, serving to distinguish from those of the Rock Dove and Ring Dove ; elongated and oval in shape, the two ends being almost equally rounded. Like the Ring Dove, this bird breeds all through the spring, summer, and autumn ; eggs may often be found from February to October, so that several broods probably are reared.

DOVE, TURTLE : *Turtur communis.*

A summer visitor to England; most common in the southern counties; rarer westwards and northwards; a rare straggler to Scotland; not common in Ireland, though it breeds there sparingly.

Situation. Usually in tall bushes growing in dense woods, plantations, and shrubberies; often in thick, high hedge-rows; occasionally on the horizontal branch of a good-sized tree; generally at a less elevation than the nest of the Ring Dove, and often within reach from the ground.

Materials. Slender twigs; a very frail and almost flat nest, through which the eggs may generally be seen.

Eggs. 2; 1·1-1·25 × 0·86-0·94. White, with a very faint creamy tint; elongated and oval; the two ends about equally rounded. End of May to July; more than one brood is therefore probably reared.

DUCK, EIDER : *Somateria mollissima.*

A scarce winter visitor only to the English coast south of the Humber, but commoner northwards. It breeds commonly on the Farne Islands, sparingly in the Firth of Forth and at various other places on the east coast of Scotland, and more or less commonly in many localities in the northern and western isles of Scotland.

Situation. On the ground among grass or sea-campion; sometimes in clefts of rocks.

Materials. Stalks of grass, sea-campion, and other sea-side plants, lined very plentifully with down from the bird's body, which is collected in some quantities for sale.

Eggs. 5—8; 2·8-3·3 × 1·9-2·05. Pale greyish-green, or greenish-buff; the eggs are covered in the absence of the parent bird, as is also the case with most of the other Ducks. Middle of May to early in June.

DUCK, TUFTED : *Fuligula cristata.*

A not uncommon winter visitor to most parts of the British Isles, though chiefly found on the coast-line. It breeds regularly, and apparently in increasing numbers. though still sparingly and very locally, in various localities scattered throughout England, Scotland, and Ireland, but more numerously in Nottinghamshire than elsewhere.

Situation. On the ground near the edge of a pond, lake, or mere, generally well concealed by a bush, a tuft, or tussock of long grass, or a clump of tall reeds or flags.

Materials. Dry reeds, grass, and sedge, lined with the bird's own down, which is of a greyish-black with obscure white centres, and smaller and darker than that of the Pochard.

Eggs. 8—10, sometimes 12 or 13; 2·15-2·4 × 1·55-1·65. Pale greenish-buff; almost indistinguishable from those of the Pochard, but, on an average, smaller. May or early in June.

DUCK, WILD : *Anas boscas;* also MALLARD.

Our commonest and most generally-distributed species of Wild Duck. It is a resident, breeding abundantly with us, though less frequently in the South of England, on account of the greater scarcity there of suitable nesting-sites.

Situation. Generally on the ground and near the edge of a lake or river, concealed among rushes, bushes, or long grass; often in woods or corn-fields away from water; not unfrequently in the crown of a pollard willow or other tree; sometimes in the bottom of a thick hedgerow; occasionally in the deserted nests of crows or other large birds.

Materials. Dead grass, reeds, and leaves, well lined with soft down from the breast of the sitting bird; usually well concealed by herbage; the down is of a neutral-grey colour, slightly tipped with white.

Eggs. 8—12, occasionally 16; 2·2-2·5 × 1·5-1·7. Pale greenish-buff; smooth shelled; oval, and almost equally rounded at both ends. April and May.

DUNLIN : *Tringa alpina.*

The commonest sandpiper on the British coasts during autumn, winter, and spring. It is also a resident, and breeds, though not abundantly, on wild, marshy moorland tracts in the western and northern parts and isles of

Scotland, the coast of Ireland, and sparingly in a few places in the North of England and in Cornwall.

Situation. A slight hollow in the ground, generally well hidden by overhanging grass, heather, or rushes.

Materials. Very few; a small twig or two, a few bents, bits of dry grass or rootlets, and sometimes a little moss.

Eggs. 4; 1·2-1·4 × 0·9-1·0. Very variable; the ground-colour varies from buff to pale green, thickly blotched and spotted with rich dark red-brown and light grey; the spots are sometimes uniformly distributed, but generally chiefly confined to the larger end; the nest is not easily found unless the bird be flushed. May or June.

EAGLE, GOLDEN : *Aquila chrysaëtus.*

Formerly, like most of the larger Hawks, much more common than now, though still a resident in some of the wildest and most mountainous parts of Ireland and the Highlands of Scotland, where it even yet breeds in small and ever-decreasing numbers; an occasional visitor only to England, though it is known once to have bred there.

Situation. High and precipitous cliffs, generally on or near the sea-coast; the nest is often almost inaccessible from being placed on a ledge in some cavity beneath an overhanging mass of rock; occasionally in trees.

Materials. Large sticks and twigs of heather or fir, lined with grass, fern, moss, and tufts, of other herbage; the nest is repaired from year to year and often grows, in consequence, to an immense size.

Eggs. 2, occasionally 3; 2·7-3·1 × 2·2-2·5. Dirty-white, blotched, spotted and clouded more or less with varying shades of red, or reddish-brown; they are laid at intervals of several days. Distinct. April.

EAGLE, SEA, *see* EAGLE, WHITE-TAILED.

EAGLE, WHITE-TAILED : *Haliaëtus albicilla;* also SEA EAGLE.

Once a common resident throughout the British Isles, breeding in many suitable situations round the coast; in England and Wales it now only occurs as a scarce straggler, though it still breeds, and in greater numbers than the Golden Eagle, on many almost inaccessible cliffs (generally, though not always, on or near the sea-coast) in Ireland and the islands of Scotland.

Situation. Ledges on, or cavities in, the face of precipitous cliffs ; occasionally in large trees.
Materials. Large sticks, with smaller ones inside, and lined with wool, fragments of turf, pieces of seaweed and other vegetable substances ; often an enormous mass—the accumulation of years.
Eggs. 2, occasionally 1 or 3 ; 2·75-3·3 × 2·1-2·4. Dirty-white, unspotted, at least as a rule, though brown markings, probably nest-stains, are often observed upon them ; rounded in shape ; rough in texture ; distinguishable from unspotted eggs of the Golden Eagle by their rougher texture. Distinct. May.

FALCON, PEREGRINE : *Falco peregrinus.*

Still a not uncommon resident, and the most abundant of the larger British birds of prey, but far less numerous than it once was, and rapidly becoming rarer from incessant persecution. It still breeds on not a few of the most precipitous sea-girt headlands on the English and Welsh coasts, and on the most of those on the Scotch and Irish coasts, as well as on some inland rock-cliffs.

Situation. Ledges on the face of precipitous cliffs, usually overlooking the sea ; occasionally on lofty church towers, sometimes, in other countries, on trees, and even on the ground.
Materials. Sticks, sea-weed, dry grass and other vegetable substances.
Eggs. 2—4 ; 1·95-2·15 × 1·52-1·75. Ground-colour pale yellowish-white, but this is usually quite concealed by a dense and uniformly-distributed spotting, freckling and mottling of brick-red, sometimes showing a beautiful purplish tint ; very variable in size and form. Early in April.

FIELDFARE : *Turdus pilaris.*

A common winter visitor to the British Islands. It has not unfrequently been recorded as having bred here, but no conclusive evidence of its having done so has, as yet, been produced. The records in question probably refer to the Missel Thrush, and are even less worthy of reliance than those relating to the breeding of the Redwing in this country.

Situation. In the branches of bushes and trees at varying heights from the ground.

Materials. A few twigs, dry grass and moss, plastered inside with mud, and thickly lined with fine dry grass.

Eggs. 4—5, often 6 and occasionally 7 ; 1·2-1·35 × 0·7-0·9. Bluish-green, thickly marbled, blotched and speckled all over (though usually most at the larger end) with reddish-brown. End of May.

FLYCATCHER, PIED : *Muscicapa atricapilla.*

A regular summer visitant, but much less common and far more local than the Spotted Flycatcher ; it breeds chiefly in Wales, the Lake district, the northern counties of England, and the eastern and midland counties of Scotland ; not recorded from Ireland.

Situation. Holes in trees, sometimes in those made by the Woodpecker ; occasionally in crevices in walls.

Materials. Dry grasses, leaves and moss, lined with hair, feathers and wool ; loosely laid together.

Eggs. 5—6, occasionally 8 ; 0·65-0·8 × 0·52-0·58. A uniform pale greenish-blue, like those of the Hedge Sparrow, but paler and slightly smaller ; occasionally, it is said, a few faint reddish specks appear. May and June ; only one brood is reared.

FLYCATCHER, SPOTTED : *Muscicapa grisola.*

An abundant summer visitor to England ; rarer and more local in Scotland and Ireland.

Situation. In trees trained against walls or buildings, particularly pears, apricots, and roses ; often in barns, summer-houses, and green-houses ; in trellis work ; among ivy on trees or walls ; small shallow holes or cavities in the bark of large trees ; occasionally in deserted Thrushes' nests, or in gas-lamps, and in almost every other conceivable situation. It is recorded that one nest was built on a hoe that hung on a nail in a tool-shed ; when the hoe was wanted the nest was taken off and laid on a shelf, and returned to its original site as soon as the hoe was hung up again, an arrangement which the parent birds seemed cordially to approve, and eventually brought off their young in safety.

Materials. Moss, grass bents and rootlets, lined with feathers, hair, and wool.

Eggs. 4—5, or 6; 0·7-0·8 × 0·52-0·62. Pale greyish or bluish or greenish-white, spotted and blotched with several shades of reddish-brown, sometimes most at the larger end; occasionally unspotted. June and July; two broods are often reared.

GADWALL: *Chaulelasmus streperus.*

An uncommon visitor from autumn to spring to the coasts and inland waters of the British Isles. It has been known to breed in Norfolk, and very occasionally in other parts of England.

Situation. On the ground under the shelter of a bush or a tuft of grass, generally near water.

Materials. Dry grass, leaves, and rushes; the down with which it is lined is like that of the Mallard, but smaller.

Eggs. 8—13; 1·95-2·15 × 1·4-1·55. Creamy-white. May.

GANNET: *Sula bassana.*

A common resident on the coast of the British Isles. It has only a few breeding stations, but to most of these many thousands of pairs resort annually. In England, the only one is on Lundy Island; in Wales there is a station on the coast of Pembrokeshire; in Ireland there is a small colony on the Bull, Little Skellig, and adjoining rocks off the coast of Kerry; in Scotland there are various stations, the chief of which (estimated at 150,000 pairs) is at Sula S'Geir, a rock about 30 miles due north from the Butt of Lewis, another is on Stack Island, whilst there are others on Borrera, and other islands in the St. Kilda group, on Ailsa Craig in the Firth of Clyde, and on the Bass Rock in the Firth of Forth.

Situation. On ledges on the sides of precipitous ocean-rocks; immense numbers generally breed in company, the neighbourhood of their nesting-sites generally having a most offensive smell arising from the droppings of the birds, and the numerous portions of decaying fish they leave about.

Materials. Chiefly sea-weed, with some straws, dry grass, and various kinds of rubbish found floating on the surface of the sea; a slight structure, usually much trodden out of shape by the bird.

Egg. 1; 2·8-3·4 × 1·85-2·15. Pale greenish-blue, as may be seen when the empty shell is held up to the light, but thickly encrusted at first with a white chalky substance, which, however, soon becomes soiled. Distinct. May; a single young one only is reared.

GARGANEY: *Querquedula circia.*

A rather uncommon visitor to the British Isles, chiefly when on migration. It nests regularly in the Broads of Norfolk, where it is protected; it has also been known to do so in Suffolk, and formerly did so in the fens of Cambridgeshire and Huntingdonshire, and in Prestwick Car, Northumberland, before these swampy grounds were drained.

Situation. In large reed-beds; in corn-fields away from water; on the ground, well concealed by a bush or a clump of rushes, grass, or other herbage.

Materials. Dry grass, sedge, reeds and leaves, well lined with down from the bird's breast. The down is like that of the teal in size, but it is not of so warm a brown, and has characteristic and distinctive long white tips.

Eggs. 8—10, sometimes 13; 1·7–1·9 × 1·3–1·4. Creamy-white, exactly like those of the Common Teal. May.

GOATSUCKER, *see* NIGHTJAR.

GOLDCREST: *Regulus cristatus.*

A fairly common resident throughout the United Kingdom.

Situation. Suspended from the horizontal twigs of the spruce-fir, cedar, or yew; not commonly found on other trees.

Materials. Moss, fine grass, spiders' webs and lichens, strongly felted together, and lined with feathers, forming one of the most beautiful and compact of all our English nests.

Eggs. 6–8, sometimes 10; 0·52–0·6 × 0·4–0·43. Rosy white, or very pale brown; some are unspotted, but others are either speckled, spotted, or mottled with light reddish-brown. April to June; more than one brood, probably, is reared.

GOLDEN-EYE : *Clangula glaucion.*

A common and regular winter visitor to the British Isles, especially the northern parts. There is little doubt that it breeds occasionally in the Highlands of Scotland, but actual proof of the fact has not yet been obtained.

Situation. In hollows in trees.

Materials. None, except the fragments of rotten wood which happen to be in the hole, and down plucked from the bird's breast; this is of a pale lavender grey, with slightly paler centres.

Eggs. 10—12, sometimes 19; 2·1–2·4 × 1·55–1·75. Bright greyish-green; smooth and glossy; often not unlike those of the Pochard. May.

GOLDFINCH : *Carduelis elegans.*

A resident, though local and partially migratory, in all English counties; not usually abundant anywhere; rarer in Scotland and Ireland.

Situation. Gardens and orchards, seeming to prefer cultivated to uncultivated districts; often in evergreens, sometimes in roses and other trees trained against a house; sometimes at the extremity of a bough of a horse-chestnut or sycamore; not often in thorn hedges.

Materials. Small twigs, bents, rootlets, lichens, moss, and wool, most compactly interwoven, and lined with hair and feathers, and the seed-down of a willow; a charmingly pretty nest, like that of the Chaffinch, but smaller.

Eggs. 4—5; 0·62–0·7 × 0·48–0·53. White, tinged with blue or green, spotted with pale purplish and dark reddish-brown, usually most at the larger end. Some specimens are much more boldly marked than others; may be distinguished from the eggs of the Greenfinch and Linnet by their smaller size. May onwards.

GOOSANDER : *Mergus merganser.*

A fairly common winter visitor to most parts of the United Kingdom, though chiefly found on tidal waters. It has been known to breed, though very sparingly, in Perthshire, Sutherlandshire, Argyllshire, and elsewhere in Scotland.

Situation. Usually in a hollow tree ; sometimes in holes under rocks.

Materials. Dry grass, roots, &c., lined with greyish-white down.

Eggs. 8—12 ; 2·5–2·9 × 1·8–1·9. Cream-coloured ; smooth-shelled, and rather glossy. May.

GOOSE, GREY-LAG : *Anser cinereus.*

Formerly a common resident, but now known only as a visitor from autumn to spring to England and Wales. It formerly bred in the fens of the eastern counties, and still does so in considerable, though decreasing, numbers in the counties of Ross, Sutherland, and Caithness, and on many of the western isles of Scotland, as well as at one locality in Ireland, in county Monaghan.

Situation. Lonely swamps, moors, and morasses.

Materials. Often a foundation of sticks, upon which is piled a large mass of dead reeds, sedge, and grass, sometimes a yard across ; the nest cavity is lined with down.

Eggs. 6—8, occasionally 12 ; 3·2-3·7 × 2·2-2·5. Dull creamy white. Distinct. April.

GOSHAWK : *Astur palumbarius.*

Once fairly common, though never probably an abundant bird in the British Isles ; now only a rare straggler to Great Britain ; still rarer in Ireland. It has bred in some parts of Scotland within the last fifty years, but does so no longer.

Situation. Lofty trees on the outskirts of woods and forests.

Materials. Sticks, twigs, roots, moss, and lichens ; it often grows to be of large size, being occupied from year to year.

Eggs. 4, occasionally 3 or 5 ; 2·1-2·45 × 1·6-1·85.

Pale bluish-white, generally unspotted, though sometimes marked with small spots of a pale reddish-brown. April.

GREBE, GREAT CRESTED : *Podiceps cristatus.*

A resident, but local, and nowhere common. It still breeds on many large inland sheets of water, especially in the midland and eastern counties of England, in Wales and in Ireland. North of Yorkshire it appears only as a winter visitor.

Situation. Among reeds near the edges of large freshwater pools or lakes ; often very conspicuous.

Materials. Decaying stems of reeds, flags, and other water-plants ; nearly level with the surface of the water, and very wet.

Eggs. 3—4 ; 2·0-2·4 × 1·3-1·6. White at first, but they very soon become encrusted with dirt ; when held up to the light they are seen to be strongly tinged with green, from the colour of the internal membrane ; oval; both ends about equally pointed. After the full complement of eggs is laid, the old birds, on leaving the nest, always cover them with weeds. Distinct. May and June.

GREBE, LITTLE : *Tachybaptes fluviatilis ;* also DABCHICK.

A resident wherever there are large reedy ponds, lakes, or slow-flowing rivers suited to its habits. It is the smallest and commonest of the British grebes, though nowhere particularly abundant.

Situation. On the surface of the water of large pools and lakes ; generally on the outskirts of a large reed-patch, though sometimes quite in the open ; often more or less floating.

Materials. Decaying reeds and other aquatic plants ; a flat nest, almost level with the surface of the water, and consequently very wet ; large for the size of the bird.

Eggs. 4—5, often 6 ; 1·3-1·55 × 0·9-1·1. White at first, but they very soon become discoloured ; when held up to the light they are seen to be strongly tinged with green, from the colour of the inner membrane ; long and oval in shape, with the two ends almost equally pointed.

After the full clutch is laid they are always covered with weeds whenever the old birds leave the nest. Distinct. May to July; two broods are usually or often reared.

GREENFINCH: *Ligurinus chloris.*

A very abundant and widely-distributed resident.

Situation. In thick hedges, ivy and other evergreens; generally in gardens, orchards, or shrubberies; not unfrequently in forks of the branches of large trees, as the elm, at a height of many feet above the ground.

Materials. Small twigs, coarse bents, moss and wool, lined with hair and feathers; a neat, well-built nest. Mr. Gurney writes:—"In a bushy plant of heath, growing in a garden near Norwich, were found two nests of the common Greenfinch, which not only were completely interwoven at the adjoining sides, but were built on one common platform, a foundation of fibrous roots and moss. Both nests were complete, except that one of them was deficient in interior lining. When found, I understand there was one egg in each." Mr. Seebohm has met with a similar instance at Hitchin.

Eggs. 4—6; 0·72-0·9 × 0·53-0·62. White, with a tinge of blue or green, spotted and speckled, usually most at the larger end, with purplish-brown and reddish-grey; very like those of the Goldfinch and Linnet, but longer. Distinct. April onwards; two broods, at least, are reared.

GREENSHANK: *Totanus canescens.*

A regular though uncommon summer visitor to the British Isles. It appears in England and Ireland as a passing migrant in spring and autumn, but breeds in fair numbers in Scotland, chiefly in the Highlands and the Hebrides, though sometimes as far south as the counties of Perth and Argyll.

Situation. A slight hollow in the ground, on an open heathy mountain moor; generally near water, though sometimes at a considerable distance from it; often much concealed by herbage.

Materials. A few twigs of heather or blades of dry grass, and a few leaves.

Eggs. 4; 1·82–2·05 × 1·3–1·4. Cream-white or warm stone-colour, blotched and spotted (usually most in a zone round the larger end) with rich, dark, reddish-brown, and with underlying grey markings. Distinct. End of May; one brood only is reared.

GROUSE, BLACK: *Tetrao tetrix.*

Generally distributed throughout Great Britain wherever there are moorland wastes suited to its habits. It has been re-introduced into several of its old haunts in the east of England from which it had been exterminated; unknown in Ireland, the Orkneys, and the Hebrides.

Situation. A slight hollow in the ground on wild mountain heaths, particularly in wet or marshy places; generally well concealed by fern, brambles, heather, or other herbage.

Materials. A few pieces of ling, heath, grass, or fern.

Eggs. 6—10; 1·9-2·1 × 1·38-1·45. Yellowish- or buffish-white, spotted and to a less extent blotched with rich brown; extremely like those of the Capercaillie, but smaller. Distinct. May; only one brood is reared.

GROUSE, RED: *Lagopus scoticus.*

An abundant resident in all hilly moorland districts throughout the British Isles, except in those counties of England which lie to the south and east of a line drawn from Bristol to Hull; especially common in Scotland. This species is remarkable as being confined to the British Isles.

Situation. A slight hollow in the ground, sheltered by a tuft of long heather, on open moorlands.

Materials. Very few; merely a few stalks of ling or heather and a little dry grass, with sometimes a few feathers.

Eggs. 7—8, not unfrequently 12; 1·75 × 1·2-1·32. Ground-colour, brownish or slightly reddish-white, more or less thickly and boldly blotched, spotted and speckled all over with dark umber-brown; like those of the Ptarmigan, but more spotted and less buff-coloured in general appearance. The hen bird only incubates, the cock remaining in the neighbourhood, and flying short distances before the intruder, to lead him away from the nest : as soon as the young come forth the cock and hen are equally assiduous in taking care of them. March to June ; one brood only is reared.

GUILLEMOT : *Lomvia troile.*

A very abundant resident on the British coasts. It breeds in immense numbers, and generally in company with the Razorbill, on all sea cliffs which are sufficiently rocky and precipitous to suit its habits, round the British Isles : Flamborough Cliffs form a very well-known breeding station. The Ringed Guillemot cannot be regarded as specifically distinct from the common Guillemot.

Situation. Ledges of rocky sea-cliffs.

Materials. None, the egg being deposited on the bare rock.

Egg. 1 ; 3·0-3·5 × 1·85-2·0. Extremely variable in colour ; the ground-tint ranges from pure white, creamy-white or light brownish-white to light yellowish-green or bright green, and reddish- or purplish-brown, with every conceivable intermediate shade ; it is irregularly blotched, spotted, streaked, and veined with dark and light browns, brownish-greys, and light brownish-pink in great variety ; occasionally creamy-bluish, or greenish-white, almost, or quite, unspotted. They often very closely resemble the eggs of the Razorbill in external colouring, but the empty shell when held up to the light is never seen to have a a green internal membrane, as is the case with the Razorbill, though green-coloured Guillemot's eggs have of course a greenish appearance when thus held up to the light ; sharply wedge-shaped, and very large for the size of the bird. Specimens from certain localities, especially Flamborough, are much more brightly coloured than those from other places. One of the most variable and beautiful of our British eggs. Mid-May onwards ; one egg a year is probably all the bird lays when undisturbed.

GUILLEMOT, BLACK : *Uria grylle.*

A winter visitor only to the English shores, but it breeds in considerable numbers on the northern and western coasts and isles of Scotland, and more sparingly on the Isle of Man and the north coast of Ireland.

Situation. In holes and crevices, or in cavities beneath large rocks and stones, either at the foot of lofty sea-cliffs or high up on the face.

Materials. None.

Eggs. 2, perhaps sometimes 3; 2·2-2·5 × 1·5-1·7. Ground-colour, pale creamy- or buffy-white, or pale bluish-green, blotched, spotted, and speckled with light reddish-brown and rich dark brown (almost black) and with ash-grey; not very variable, except in the number of the markings. End of May to end of June.

GULL, BLACK-HEADED: *Larus ridibundus.*

A common resident, though, to a large extent, intermigratory. During winter it chiefly frequents the coast, but it retires inland to breed, which it does in many spots known as "Gulleries." From Yorkshire northwards its breeding-stations are numerous, but southwards they are not frequent, and are steadily decreasing in number, on account of the extensive draining of bogs and swamps. There are, however, still colonies in Norfolk (at Scoulton and Hoveton Meres), Essex, Staffordshire, Dorsetshire, and elsewhere.

Situation. A slight depression, the soft boggy ground at the edge of lakes or meres, or more often on an island in a lake.

Materials. Dead grass or sedge; a very slight nest, sometimes none at all.

Eggs. 2—3, occasionally 4; 1·95–2·45 × 1·35–1·55. Very variable; generally yellowish- or greenish-olive-brown, or dark russet brown, spotted, blotched, and streaked in a great variety of ways with dark brown and light greyish-brown; occasionally pale bluish-green, almost or quite unspotted. Distinct. April; one brood only is reared.

GULL, COMMON: *Larus canus.*

A common visitor during winter to most of the British coasts, and to many inland places. It breeds in numbers at various spots in the north of Ireland, as well as in Scotland and the adjacent islands, but is not now known to do so in England.

Situation. Usually on the shores of low grassy islands, either in the sea, in deep bays, in lochs near the coast, or in inland lakes; less often on rocky cliffs.

Materials. Dry grass, seaweed, scraps of heather, the stalks of the sea-campion and other shore-loving plants; a fair-sized nest, as a rule.

Eggs. 3; 2·1-2·35 × 1·6-1·7. Olive- or buffish-brown, spotted and blotched (generally most near the large end) with dark brown (almost black) and faint grey; occasionally the ground-colour is of a pale blue or light straw-colour; not easily confused with the eggs of any other British bird, except some varieties of Richardson's Skua. End of May; one brood only is reared.

GULL, GREAT BLACK-BACKED: *Larus marinus.*

A resident or partial migrant, widely distributed round the coast in winter. It breeds in greater or less numbers in many places on the coasts of Ireland, Wales, and Scotland, on the islands adjacent to the latter, and at several places on the west and south-west coasts of England, but nowhere upon the east or south-east coast.

Situation. On the ground, in an almost inaccessible position on the summit of a flat-topped rock or cliff; sometimes on a low island, either in the sea or in an inland lake.

Materials. Dead grass, seaweed, and a twig or two of heather, often lined with a few feathers or a little sheep's-wool; an untidy nest, usually of large size.

Eggs. 3, sometimes only 2: 3·0-3·2 × 2·0-2·2. Greyish-brown or stone-colour, boldly spotted with dark brown and inky-grey; larger, as a rule, than those of any other British Gull. May.

GULL, HERRING: *Larus argentatus.*

A resident, widely and commonly distributed round the coast. It breeds in many suitable situations—chiefly on the coasts of Scotland, Wales, and Ireland, but also at Flamborough, on the Farne and Channel Islands, and at various spots on the south and west coast of England, from Beachy Head to Cornwall, and from there to Cumberland.

Situation. On the ledges on the face of high rocky sea-cliffs; also on the level ground on low marshy or rocky islands. Many nests are often found close together.

Materials. Sea-weed straws and the stalks of fern or shore-loving plants, lined with dry grass; sometimes a very large structure, but very variable in size.

Eggs. 3, occasionally only 2; 2·7-3·0 × 1·9-2·1. Usually stone-colour or light olive-brown, but sometimes pale bluish-green or dark buffish-brown in ground-colour, blotched and spotted with dark umber-brown; very variable; occasionally pale bluish-green, unspotted. The eggs of this species require very careful identification, as typical examples are almost or quite undistinguishable in colour from those of the Common and Lesser Black-backed Gulls. Early in May; one brood only is reared.

GULL, KITTIWAKE, *see* KITTIWAKE.

GULL, LESSER BLACK-BACKED: *Larus fuscus.*

A resident or partial migrant, common on most parts of the coast. It breeds in many suitable places round the coast of Great Britain, though there are none of its breeding-stations south of Northumberland or east of Devonshire; in Ireland there are but few of its breeding-stations.

Situation. On the ground, in crevices or depressions, or among grass or other herbage, on flat-topped rocky islands; also on broad ledges near the tops of cliffs; islands in lakes are a favourite resort.

Materials. Dry grass, scraps of sea-weed, and the leaves and stems of shore- or rock-loving plants; often a considerable structure.

Eggs. 3, sometimes only 2; 2·4-2·8 × 1·7-2·0. Very variable in size, shape, and colour; usually russet-brown, olive-brown, or light stone-colour, but sometimes greyish-buff, light brown, pale bluish-green, and even almost white—more or less spotted and blotched (often most round the larger part) with rich dark brown (frequently almost black) and brownish-grey; often indistinguishable from the eggs of the Herring Gull; they should, therefore, be identified with great care. May and early June.

HARRIER, ASH-COLOURED, *see* HARRIER, MONTAGU'S.

HARRIER, HEN : *Circus cyaneus.*

Formerly a resident, but has now become rare in consequence of the extensive draining of the fenny districts it used to inhabit. It still breeds, however, occasionally in some of the wilder parts of the British Isles, as, for instance, in Devon and Cornwall, the Lake district, Wales, the Highlands, and the northern islands of Scotland.

Situation. On the ground, on a heath-covered moor, in a cornfield, or in a reed-patch.

Materials. Sticks, twigs of heather, wool, and dry grass ; often a large nest, when placed in a wet situation.

Eggs. 4—5, sometimes 6 ; 1·65-1·8 × 1·4-1·5. White, faintly tinged with bluish-green, and occasionally marked with a few light-brown spots ; rounded in shape and rough in texture. May.

HARRIER, MARSH : *Circus æruginosus.*

Formerly an abundant resident on wet marshy moorlands and fens throughout Great Britain and Ireland, but now rare and local. It still breeds, however, in the Norfolk Broads, and in Devonshire, and may be occasionally found in Cornwall, Somerset, Dorset, Hants, and Shropshire.

Situation. On the ground, in large reed-patches, or among fern or furze ; occasionally, it is said, in trees.

Materials. Sticks, reeds, and sedge ; often a very large structure.

Eggs. 3—4 ; 1·8-2·1 × 1·45-1·6. Dirty white, faintly tinged with pale greenish-blue, generally unspotted, but sometimes faintly marked with light brown ; rounded in shape, rough in texture. May.

HARRIER, MONTAGU'S : *Circus cineraceus ;* also ASH-COLOURED HARRIER.

Like the other Harriers, formerly a common resident ; but now (owing to the draining of its fenny haunts) a rare bird. It still occasionally, though very rarely breeds with us, when left unmolested. For instance, there was a nest in the Isle of Wight in 1875, and one in Dorsetshire in June, 1887.

Situation. On the ground, among fern, furze, growing corn, or clover.

Materials. A few twigs, dry grass, &c.

Eggs. 4—6; 1·3-1·75 × 1·25-1·5. White, faintly tinged with greenish-blue; sometimes spotted faintly with light reddish-brown. May.

HAWK, SPARROW, *see* SPARROW-HAWK.

HAWFINCH : *Coccothraustes vulgaris.*

Best known as a winter visitor : as such it is met with not uncommonly throughout England, and casually in Scotland and Ireland. It breeds here much more commonly than used to be supposed, especially in the south-eastern portion of England, and has probably nested in all the English counties south of (and including) Yorkshire, as well as rarely in Ireland.

Situation. Very various; usually in old scrubby white-thorn bushes, on the horizontal arms of oak, apple, or pear trees, or in the heads of pollard hornbeams; occasionally in hollies or fir-trees, or among ivy; generally in orchards, woods, or plantations; usually within from 5 to 25 feet of the ground.

Materials. Chiefly small twigs, with plant-stems and lichens, lined with fine roots and sometimes a little hair; very shallow; rather large for the size of the bird, and loosely, though not untidily put together.

Eggs. 4—6; 0·85-1·0 × 0·67-0·8. Ground-colour pale bluish or greyish-buff, very boldly marked with a few spots and curious broad vermiform scribblings or streaks of dark brown (at times almost black), and with under-markings of lighter greyish-brown; the amount of marking is very variable, some specimens being almost or quite without any. Distinct. May; probably one brood only is reared.

HEDGE-SPARROW : *Accentor modularis;* also HEDGE ACCENTOR.

An abundant and very familiar resident.

Situation. In whitethorn hedges, dwarf hollies, laurels, furze bushes, among ivy, &c. Very curious sites are sometimes chosen.

Materials. Twigs, dry grass, moss and wool, lined with hair. A very pretty object, especially when it holds the brightly-coloured eggs.

Eggs. 4—6; 0·72-0·82 × 0·55-0·65. Bright turquoise-blue, unspotted. March to July; as many as three broods are often reared in a season.

HERON : *Ardea cinerea.*

Generally distributed, and not uncommon throughout the British Isles. In the breeding season they collect into colonies, called "Heronries," where many nests are generally built near together. The number of Heronries existing at the present time in the British Islands is about 200.

Situation. The tops of tall trees; occasionally in low holly and other bushes; on precipitous rocks near the coast: on old walls and ruins, and even, in some places, on the ground; usually near some large sheet of water.

Materials. Sticks, lined with small twigs, wool, roots, and dry grass; a large structure, not unlike an immense rook's nest, but flatter and broader.

Eggs. 3—5; 2·3-2·65 × 1·5-1·79. Uniform dull greenish-blue. Distinct. March onwards; two broods are sometimes, if not usually, reared.

HOBBY : *Falco subbuteo.*

An uncommon and local, though regular, summer visitor to England and Scotland; almost unknown in Ireland. It still breeds sparingly, though in decreasing numbers, chiefly in the southern and eastern portion of Great Britain, as, for instance, in Norfolk, Nottinghamshire, Yorkshire, and Lincolnshire.

Situation. High trees, often adopting the nest of a crow or magpie, and using the same materials.

Eggs. 3—4, occasionally 5; 1·6-1·8 × 1·3-1·4. Ground-colour yellowish-white, but almost always entirely concealed by a freckling of dull brick-red; very like those of the Kestrel, but larger and paler. May.

HOOPOE: *Upupa epops.*

An irregular visitor to England, chiefly in the spring and autumn. It occurs annually in the south, and has been met with in nearly all the English counties. In Scotland it is rarer, though it has occurred as far north as the Shetlands. It has been known to breed in Dorset, Hants, Northamptonshire, Surrey, Sussex, and elsewhere, and would certainly have bred in many other counties, were it not so relentlessly persecuted.

Situation. Holes in trees, rocks, or walls. The nest generally smells most offensively.

Materials. Often none; sometimes a few straws, pieces of dried grass, roots, &c.

Eggs. 5—7; 0·96-1·15×0·65-0·77. Pale greenish-blue at first, but they soon become soiled; elongated in shape; the surface is curiously pitted all over in a manner which at once distinguishes them from any other European bird. Distinct. End of May; one brood only is reared.

JACKDAW: *Corvus monedula;* also DAW.

An abundant species; resident throughout the British Isles, except in the extreme north: it is becoming increasingly numerous.

Situation. Towers of churches; little-used chimneys; holes in ruins, cliffs, rocks, and chalk-pits; hollow trees; sometimes in holes in the ground, especially rabbits' burrows. The bird usually nests in colonies.

Materials. Sticks, straw, dry grass, large feathers, wool, moss, rabbits' down, shavings, leaves, horse-dung, and various other substances; often an enormous and very untidy mass of sticks and other materials.

Eggs. 4—6; 1·3-1·6 × 0·95-1·1. Pale bluish-green, sometimes almost white, more or less closely and richly freckled, spotted and blotched with olive-brown and faint ash-grey. The amount and distribution of the markings varies greatly; sometimes the markings are confluent at the larger end, sometimes uniformly distributed; occasionally pale blue, unspotted. May and June; one brood only is reared.

JAY : *Garrulus glandarius.*

A more or less well-known resident in all well-wooded districts ; rarer in Scotland and in the north of Ireland.

Situation. In the thickest parts of woods ; in the fork of a tree or the top of a thick bush ; seldom as much as 20 feet from the ground.

Materials. Sticks and roots ; small fibrous roots and a little grass for lining ; a bulky though neat structure.

Eggs. 5—6, sometimes 7 ; 1·2-1·35 × 1·0-1·85. Pale greenish-blue, very thickly sprinkled and freckled with light olive-brown spots, generally distributed equally all over the shell, so as almost or quite to hide the ground-colour, but often more or less confluent on the larger end, where there are generally three or four irregular, black, hair-like streaks. Distinct. End of April, or early in May ; one brood only is reared.

KESTREL : *Tinnunculus alaudarius.*

A fairly common resident in nearly all parts of Great Britain and Ireland, though partially migratory.

Situation. Ledges on or cavities in the face of cliffs or chalk-pits ; sometimes in holes in ruined ivy-covered buildings, or in the deserted nests of Crows, Magpies, Sparrow-hawks, and even at times Ringdoves ; occasionally in hollow trees, and even on the ground among coarse herbage.

Materials. Sticks, dry grass and wool ; a slight, ill-made nest ; ejected pellets are often numerous in and round it.

Eggs. 5—6, occasionally 7 ; 1·45-1·7 × 1·12-1·35. Ground-colour, dirty- or creamy-white, but almost invariably quite concealed by a uniform washing of brick-red, or by a dense, evenly-distributed spotting, blotching, clouding, or freckling of the same colour, with very often a fine purplish bloom or tinge, which soon disappears after the eggs are blown ; somewhat variable as to size, and decidedly so as to colouring, though not easily mistaken for those of any other British bird or birds, except the Merlin and Hobby, than which they are, as a rule, rather redder. May ; one brood only is usually reared.

KINGFISHER : *Alcedo ispida.*

A familiar resident, frequenting the banks of rivers and streams throughout the whole of the British Isles, except the extreme north, though nowhere numerous.

Situation. A hole in a river-bank, generally three or four feet above the usual surface of the water; the hole excavated by the Sand Martin is often adopted; the nest is occasionally placed in a bank at some distance from any water, and even a hole in a wall has been known to be utilised.

Materials. Simply the ejected bones of small fishes; the hole leading to the nest is generally in a very filthy condition.

Eggs. 6—8, sometimes 9; 0·87-0·95 × 0·72-0·8. Nearly round, white and shining; when quite fresh from the nest, and unblown, the yolk shows through the shell and gives a beautiful salmon-colour to the egg. They may be distinguished by their shape from the eggs of any other British bird. March to July. Distinct. One brood only, as a rule, is reared.

KITE : *Milvus ictinus.*

Formerly an abundant species throughout Great Britain, but now practically extinct. It bred in Lincolnshire up to 1870, and two nests were recorded to have been found in Radnorshire the same year, and one in Breconshire in May, 1875, but its nesting with us must now be regarded as an altogether exceptional occurrence.

Situation. Tall trees, generally pines growing in extensive woods or forests, placed either in a fork of the main trunk or among the smaller branches.

Materials. Dead sticks and twigs, lined with a quantity of dry grass, wool, moss, rags, shreds of paper and any other rubbish the bird can easily obtain; a large structure.

Eggs. 2—3, sometimes 4; 2·1-2·4 × 1·64-1·82. Dirty-white, more or less spotted and finely streaked, generally most at the larger end, with light reddish-brown. May.

KITTIWAKE: *Rissa tridactyla;* also KITTIWAKE GULL.

Abundant and widely distributed on and near the whole of the coast-line of the British Islands during winter. In summer it is more local, though breeding in large numbers wherever it finds high rocky sea-cliffs suited to its purpose; these are numerous on the coasts of Scotland, Wales, and Ireland, but in England the chief are at Flamborough, the Farne Islands, on the coasts of Devon and Cornwall, and on the Isle of Man.

Situation. On the ledges on the face of precipitous rocky sea cliffs; many nests are usually placed close together.

Materials. Sea-weed and other marine vegetation, lined with dry grass, often in a very foul condition.

Eggs. 2—3, occasionally 4; 2·0-2·25 × 1·5-1·68. Stone-colour, olive- or buffish-brown, or pale greenish-blue in ground-colour, boldly spotted and blotched (often most round the larger end) with rich brown, light brown, and grey; variable, though not easily confused with those of any other British bird. Distinct. End of May or early in June.

LAND-RAIL, *see* CRAKE, CORN.

LAPWING: *Vanellus vulgaris;* also PEEWIT.

An abundant resident throughout the British Isles, though to some extent internally migratory, as it moves southwards in winter. It breeds in some spots in every county.

Situation. A slight depression in the ground on waste lands, marshes, meadows, and cultivated fields; a number of nests are usually found near together.

Materials. A few straws, dry grass, and bents, with often a little moss.

Eggs. 4; 1·75-2·0 × 1·28-1·4. Very variable; ground-colour olive, stone-colour, buffish-brown, or light buff, more or less thickly blotched and spotted, and generally most round the larger end, with blackish-brown and with underlying inky-grey markings; acutely pointed at the smaller end as a rule, though variable in shape; like those of the golden plover, but browner as a rule, and slightly smaller in size. April and May; one brood only is reared.

LARK, SKY, *see* SKY-LARK.

LARK, WOOD, *see* WOOD-LARK.

LINNET: *Linota cannabina.*

Generally resident throughout the British Isles, though partially migratory. It usually frequents commons, heaths, and the less cultivated districts.

Situation. In whitethorn, blackthorn, or furze bushes—most frequently the latter; rarely in trees; occasionally on the ground.

Materials. Small twigs, moss, bents and wool, lined with hair, rootlets, vegetable-down and feathers; neatly constructed; usually within a few feet of the ground, but sometimes much higher.

Eggs. 4—6; 0·66-0·8 × 0·5-0·55. White, tinged with bluish-green, speckled, spotted, and sometimes streaked (usually most at the larger end) with reddish-brown and pale purplish-red; occasionally almost, or quite unspotted; often indistinguishable from eggs of the goldfinch and greenfinch, but usually larger than those of he former, and smaller than those of the latter. April onwards; two broods are reared—often, at least.

LINNET, MOUNTAIN, *see* TWITE.

MALLARD, *see* DUCK, WILD.

MAGPIE: *Pica rustica.*

Resident almost throughout the British Isles, though much commoner in some places than in others.

Situation. In the topmost branches of trees, generally tall ones; often in tall hedges; sometimes in low bushes—even in gooseberry-bushes.

Materials. The outer and upper portion of the nest, which is almost spherical and domed, is composed of thorny sticks, generally of the blackthorn; smaller and thornless sticks are inside these, and then follows a lining of clay, which in its turn is covered with fibrous roots and dry grass. The whole structure is of large size, and almost impenetrable on account of the thorny sticks of which it is constructed. There is a circular hole on the side, through which the birds enter. The incubating bird has its head pointing towards this hole. A popular, but erroneous, belief gives a second hole to the Magpie's nest, opposite the first ; the supposed object being to allow the bird's long tail to pass out.

Eggs. 6—8, occasionally 9 ; 1·25-1·45 × 0·9-1·0. Light greenish- or yellowish-brown ; closely blotched, spotted, freckled, and speckled all over (though sometimes most at the larger end) with greenish olive-brown, and with a few faint underlying ash-grey blotches : very small in proportion to the size of the bird. March or April ; one brood only is reared.

MARTIN : *Chelidon urbica ;* also HOUSE MARTIN.

An abundant summer visitor.

Situation. Under eaves of houses, barns, and other buildings ; string-courses, and other projections in churches ; beneath arches of bridges ; in the upper angles of windows ; on the face of chalk-pits, rocks and sea-cliffs ; often in large colonies.

Materials. Pellets of mud and clay, neatly welded together, and forming a compact domicile, enclosed on all sides, excepting a circular hole, just large enough to admit the birds. Internally lined with straw, hay, and feathers ; the nest is very frequently taken possession of as a nesting place by the Common Sparrow.

Eggs. 5—6 ; 0·75-0·83 × 0·5-0·54. White, tinged while unblown with pink ; unspotted ; glossy. May to August ; several broods are often reared.

MARTIN, HOUSE, *see* MARTIN.

MARTIN, SAND : *Cotile riparia.*

A common summer visitor, though more local than the Martin or Swallow.

Situation. At the extremity of deep holes, excavated by the bird itself, in the perpendicular face of sand-pits, cliffs, railway-cuttings, or river-banks ; the hole is often several feet in length, though usually not over one foot or eighteen inches ; many nests are generally found together.

Materials. Dry grass, straw, and feathers ; loosely laid together.

Eggs. 4—6 ; 0·62-0·76 × 0·46-0·51. White, unspotted ; smooth and glossy. May and June ; more than one brood is usually reared.

MERGANSER, RED-BREASTED : *Mergus serrator.*

A common winter visitor, to nearly all parts of the United Kingdom, though chiefly found on tidal waters. It breeds not uncommonly in the west of Scotland, north of the Clyde, and on the northern and western islands, as well as in a considerable number of places on the north and west coasts of Ireland.

Situation. On the ground, generally near the edge of a lake, and among long grass or scrubby bushes ; often concealed beneath a large rock, or placed in a hollow at the foot of a dry bank.

Materials. Dry grass, twigs of heather, and dead leaves, lined with light brownish-grey down, with obscure pale tips and centres.

Eggs. 6—9, sometimes 12 ; 2·4-2·8 × 1·6-1·85. Pale olive to buffish-grey ; smooth-shelled and rather glossy. End of May and early in June ; one brood only is reared.

MERLIN : *Falco æsalon.*

This, one of the handsomest, liveliest, and smallest of our British Falcons, is best known as a not uncommon winter visitor to the southern counties of England, where it is only known to breed very occasionally ; but it breeds regularly, though nowhere in great numbers, in every county, from Derbyshire and Yorkshire northwards to the Shetland and Orkney Islands, as well as in the mountainous parts of Ireland.

Situation. On the ground among heather in the loneliest parts of extensive moors ; occasionally, it is said in other countries, on trees or rocky cliffs.

Materials. A few heather twigs and a very scanty lining of rootlets or dry grass, placed in a slight hole scratched in the ground.

Eggs. 4—5, sometimes 6; 1·5-1·65 × 1·15-1·2. Yellowish-brown in ground-colour, though this is almost always entirely concealed by a uniform suffusion, or dense and evenly-distributed freckling, of reddish-brown, which sometimes has a fine purplish tinge; very like those of the Kestrel or Hobby, but browner in tint as a rule, and smaller. May.

MOORHEN: *Gallinula chloropus;* also WATER HEN.

One of our most familiar and abundant birds, frequenting the banks of lakes, ponds, and rivers throughout Great Britain and Ireland; though a resident, it is at the same time partially migratory.

Situation. Generally on the ground or on the surface of the water, among reeds, rushes, equisetums, or other tall water-plants or low bushes, beside lakes, ponds, streams, rivers, and canals; sometimes on a tussock of grass in a swamp; often on a more or less horizontal branch of a tree, low down over water; occasionally in spruce-firs or other trees, 20 feet or more above the water.

Materials. Dead and decaying leaves and stalks of reeds and flags, matted and sodden together, neatly lined with finer dry grasses and sedges; often a fair-sized nest.

Eggs. 7—9, sometimes 10; 1·55-1·9 × 1·15-1·3. Buffish-white or reddish-buff, more or less sparingly spotted and speckled with reddish-brown and faint grey. The eggs are often covered by the birds when they leave the nest; they are very like those of the Corn-Crake and the Rails, but larger; not very variable. Distinct. March to August; two and even three broods are sometimes reared in a season.

NIGHTINGALE: *Daulias luscinia.*

A regular summer migrant, breeding more or less commonly throughout England south of Yorkshire and east of Devonshire; unknown in Ireland and Scotland.

Situation. On or near the ground, sheltered by rank herbage, on hedge-banks ; or near the base of a large bush in woods, coppices, and plantations.

Materials. Dead leaves (usually of the oak), grass, and other similar material, neatly lined with rootlets and horsehair ; a large and, externally, a rather untidy structure.

Eggs. 4—5, sometimes 6 ; 0·75-0·93 × 0·57 × 0·65. Generally a rich uniform olive-brown, but not unfrequently a dull greenish-blue ; usually quite unspotted, but traces of mottling are sometimes observable on eggs of the lighter variety. Distinct. May ; a single brood only is reared.

NIGHTJAR : *Caprimulgus europæus ;* also GOATSUCKER.

A widely distributed summer visitor, found over the whole of the British Isles, but somewhat local, especially in Ireland, and nowhere abundant. It is a nocturnal bird, and is more often heard than seen.

Situation. On the ground, in woods, or on sandy heaths, particularly under shelter of the common bracken or of a furze-bush.

Materials. None, the eggs being laid upon the bare ground.

Eggs. 2 ; 1·1-1·4 × 0·8-0·95. White, sometimes tinged with pale buff, variously blotched, mottled, clouded, veined, and spotted with brownish-black, light-brown, and faint lilac-grey ; they are oval in shape, the two ends being almost equally rounded, and can hardly be confused with those of any other British bird. The female, when sitting upon her eggs or young, squats so close and flat, besides remaining motionless, and her colours harmonize so well with the surrounding surface of the ground, that she is not readily seen, unless one happens to catch sight of her large lustrous dark eye ; indeed, when the young are hatched she will almost let one tread on her before she attempts to rise. Distinct. End of May or early in June ; one brood only is reared as a rule.

NUTHATCH : *Sitta cæsia.*

Resident and not uncommon in most thickly-wooded districts of the southern and eastern counties of England; it is rarer northwards, but breeds occasionally even in the most northern counties; very rare in Scotland, and unknown in Ireland.

Situation. The hole of a decaying tree, especially apple; occasionally in a hole in a wall, and even in the side of a haystack; the bird invariably plasters up the hole very neatly with clay, leaving a small round opening.

Materials. The dried dead leaves of the oak, apple, and elm, flakes of bark, &c.; very carelessly arranged.

Eggs. 5—7; 0·75-0·85 × 0·53-0·6. Pure white, spotted with red-brown, not unlike those of the Great Titmouse, but larger. The distribution and size of the spots varies greatly; at times they are evenly distributed, at others they form a zone. During incubation the female sits very close, and it is almost impossible to drive her from the nest; she defends it to the last extremity, striking with her beak and wings, and making at the same time a hissing noise. April and May.

ORIOLE, GOLDEN: *Oriolus galbula.*

A rare, and to a large extent an accidental, summer visitor to England, though it has occasionally bred in the southern counties, and would do so oftener, were it not invariably molested.

Situation. Suspended beneath the fork of a large branch of a tree, usually an oak, and generally about 30 feet from the ground.

Materials. Leaves of sedge, strips of bark, sheep's-wool strongly interwoven, and lined with the flowering heads of grasses.

Eggs. 4—5; 1·1-1·35 × 0·8-0·93. Pale creamy-white, with a few well-defined spots of dark purplish-brown, and often a few underlying spots of purplish-grey. Distinct. June.

OSPREY: *Pandion haliaëtus.*

Still a resident in Great Britain, though a very rare one. It is best known as a passing migrant in spring and autumn, when specimens are now and then obtained, usually near the sea-coast. There are still one or two jealously-guarded eyries in Inverness-shire, Ross-shire, and Galloway. In Ireland it is only a very rare straggler. It must once have been a very much commoner bird than now.

Situation. The top of a lofty tree; on the highest part of some ancient ruin; on some lonely isolated rock in a solitary mountain loch; always near water.

Materials. Sticks and pieces of turf, lined with wool and moss; often an immense structure.

Eggs. 3, occasionally 4; 2·5-2·15 × 1·75-1·95. Ground-colour creamy-white, generally boldly and irregularly blotched and spotted (usually most at the larger end) with dark rich reddish-brown, which sometimes has a fine purplish tint, and at other times these spots are accompanied by others of a paler red; very variable as to markings. May; one brood only is reared.

OUZEL, RING, *see* RING-OUZEL.

OUZEL, WATER, *see* DIPPER.

OWL, BARN: *Strix flammea.*

A fairly common resident throughout the British Isles; rarer in the north of Scotland.

Situation. In old hollow trees; holes in church towers, ruins, and other old buildings; the interior of large barns or dovecotes, &c.

Materials. None, except the decayed wood or other rubbish found in the holes in which it breeds, and the numerous large pellets which the birds disgorge.

Eggs. 2—6, sometimes 7; 1·53-1·7 × 1·2-1·3. Pure white, unspotted; not glossy; very rounded in shape. They seem, often at least, to be laid in pairs, a second pair, and sometimes a third, being laid before the young produced from the first pair have flown. May to July, sometimes later, so that several broods probably are produced.

OWL, LONG-EARED: *Asio otus.*

Resident throughout Great Britain, though somewhat local and nowhere numerous; it is most common where there are large pine-woods.

Situation. Tall trees, usually pines, in thick woods or plantations.

Materials. The nest of a Crow, Ring Dove, or Magpie, or the drey of a Squirrel is usually adopted; this bird, it is said, never builds a nest for itself.

Eggs. 5—6, sometimes 7; 1·5-1·76 × 1·26-1·35. Pure white, unspotted, oval in form; not glossy. March and April.

OWL, SHORT-EARED: *Asio brachyotus.*

Best known as a regular, and at times a common, winter visitor, but a few still remain to breed on the fens of Cambridgeshire and the extensive heaths in Norfolk and Suffolk, as well as on marshy moorlands in the north of England and in Scotland.

Situation. On the ground, among sedge or heather.

Materials. Very little, or none; a few dry reeds, or leaves of the sedge.

Eggs. 4—7; 1·5-1·65 × 1·2-1·31. Pure white, unspotted; oval in shape; not glossy; indistinguishable from those of the Long-eared Owl. May.

OWL, TAWNY: *Syrnium aluco;* also WOOD OWL.

A resident in densely-wooded districts throughout Great Britain, though local and not common; very rare in Ireland.

Situation. Generally in a hollow in a large tree: sometimes in the deserted nest of a Ring Dove, Crow, Magpie, or Squirrel; occasionally upon the ground, in rabbit-burrows, or in barns or out-houses.

Materials. None brought by the bird, except its own disgorged pellets, which usually form the bed on which the eggs are laid.

Eggs. 3—4; 1·7-1·9 × 1·45-1·6. Pure white, unspotted; rounded in shape; somewhat glossy. Distinct. March and April, but sometimes much later.

OWL, WOOD, *see* OWL, TAWNY.

OYSTER-CATCHER : *Hæmatopus ostralegus.*

A common resident on the coasts of the British Isles, except in the southern parts of England and Ireland, breeding in many suitable localities ; also at some inland places.

Situation. A slight depression scratched in the sand or shingle of the sea-shore, a little above high-water mark ; occasionally in very curious situations.

Materials. None, except sometimes a slight paving of small stones.

Eggs. 3, occasionally 2 or 4 ; 2·07-2·35 × 1·47-1·6. Yellowish-stone-colour, blotched, spotted, and streaked with rich dark-brown and ash-grey ; sometimes the spots are uniformly distributed, at others they form a zone ; very like one variety of the eggs of the Stone Curlew, but as a rule larger and more darkly coloured. May and early June ; one brood only is reared.

PARTRIDGE : *Perdix cinerea.*

A resident in well-cultivated districts throughout the British Isles ; more or less abundant according to the amount of care devoted to its preservation as a game-bird.

Situation. On the ground, in fields of standing corn or grass ; among weeds on hedge-banks, &c. ; occasionally in very strange situations.

Materials. Nothing more than the stems of the corn-weeds growing in such places, scratched and trampled down, with a few dry grasses and dead leaves.

Eggs. 10—20 ; 1·32-1·5 × 1·05-1·15. Pale olive-brown, unspotted ; occasionally white or pale bluish-green ; like those of the Pheasant, but much smaller ; a large number of eggs (as many as 33 in some instances), the produce of more than one bird, have been found in the same nest. Distinct. May and early June ; one brood only is reared.

PARTRIDGE, RED-LEGGED : *Caccabis rufa.*

A resident, though only naturalized here about the year 1770. It is an abundant bird in Essex, Suffolk, and Norfolk, and is more or less common in most of the eastern counties. Further to the north and west, though occasionally met with, it does not seem to have established itself. Attempts to introduce it into Ireland and Scotland have not been successful.

Situation. On the ground, in fields of corn or clover, or among long rank grass and other herbage on hedge-banks; not unfrequently upon the top of straw-stacks.

Materials. Merely a few dead leaves and a little dry grass.

Eggs. 12—18; 1·5-1·6 × 1·15-1·25. Ground-colour a light brownish-white, spotted and speckled more or less thickly, and generally most near the larger end, with light chocolate-brown; occasionally the ground-colour is pure white; shell, very thick, hard, glossy, and minutely pitted. Distinct. May; one brood only is reared.

PEEWIT, *see* LAPWING.

PETREL, FULMAR: *Fulmarus glacialis.*

An ocean-bird which is only a straggler to the British coasts, chiefly during autumn and winter, when driven in by severe storms. It breeds in vast numbers on the islands of the St. Kilda group, and perhaps in small numbers on some of the islands on the west coast of Scotland.

Situation. On the face of sloping or perpendicular sea-cliffs, in short burrows in the soil, often not deep enough to conceal the sitting bird.

Materials. Seldom any; at times a little dry grass.

Egg. 1; 2·6-3·2 × 1·85-2·1. Pure white; rough and chalky in texture; not glossy; variable in size. The egg very quickly becomes stained and discoloured. End of May and June.

PETREL, LEACH'S FORK-TAILED: *Procellaria leucorrhoa.*

An uncommon straggler to the English coast, usually after severe storms, but it breeds on the islands of the St. Kilda group, on North Rona, and probably on some of the other islands on the west coast of Scotland as well as in Ireland.

Situation. In holes in rocks and stone walls, under stones and similar situations. One main entrance often serves for several nests.

Materials. Stalks and blades of grass, with a scrap for two of lichen or moss.

Egg. 1 ; 1·25-1·35 × 0·92-1·0. White, with a faint zone of minute red specks round the larger end ; very fragile ; without gloss ; almost equally blunt at both ends. Distinct. June ; one brood only is commonly reared.

PETREL, STORM : *Procellaria pelagica.*

A common enough species out on the open seas around the United Kingdom, but it seldom or never comes to land, except during the breeding season, or when driven inland by severe storms, after which it is not unfrequently found as far from the sea as the midland counties. It does not breed anywhere on the east coast of England or Scotland, but does so more or less abundantly in the Channel and Scilly Islands, on various islands off the Welsh coast, on most of the western and northern isles of Scotland, and on many round the Irish coast, especially on the Blasquets.

Situation. Holes in cliffs and old stone walls, in rabbit-burrows, beneath large stones, &c. The old birds are never seen abroad during daylight, but the nest may often be detected, especially in the evenings, by the clamour of the young birds underground.

Materials. Simply a few blades of grass or fragments of the stalks of plants.

Egg. 1 ; 1·0-1·2 × 0·8-0·86. White at first, but soon becoming of a creamy tint from contact with the dirty feathers of the bird, generally sprinkled with minute reddish-brown specks, which often form a faint zone round the larger end ; rough in texture ; not glossy ; almost equally rounded at both ends. Distinct. June to September.

PHALAROPE, RED-NECKED : *Phalaropus hyperboreus.*

Known only as a passing migrant in spring and autumn throughout Great Britain, except in the northern portions of Scotland, and in the Shetlands and Hebrides, where it still breeds; unknown in Ireland.

Situation. A slight depression in the ground in grassy swamps; usually near water.
Materials. A little dry grass.
Eggs. 4; 1·05-1·2 × 0·8-0·85. Pale buff or olive, more or less thickly blotched, spotted, and speckled (generally most near the larger end), with varying shades of rich dark-brown, and with a few spots of faint grey. Distinct. June; one brood only is reared.

PHEASANT: *Phasianus colchicus.*

A naturalized and abundant resident in a more or less semi-domesticated condition throughout Great Britain.

Situation. On the ground, amidst coarse grass and weeds, in plantations or hedges, or in the scrub on the outskirts of woods; occasionally in an old Squirrel's drey, or on the top of a wood- or straw-stack; this bird is polygamous.
Materials. Scarcely any, beyond the dried grasses among which it is placed.
Eggs. 8—13; 1·75-1·9 × 1·35-1·45. Pale olive-green or brown, unspotted; occasionally a pale bluish-green; many instances have occurred of two Pheasants, and even a Pheasant and a Partridge laying in the same nest. Distinct. April and May; one brood only is reared.

PINTAIL: *Dafila acuta.*

A not uncommon winter visitor to most parts of the coasts of the British Isles. It breeds occasionally in Ireland, and is believed once to have done so in Northumberland and Norfolk; in Scotland there can be no doubt that it still sometimes nests.

Situation. On the ground among rushes, grass, or other coarse herbage.
Materials. Dead grass, and sedge, lined with soft down from the body of the parent bird; this is brown, faintly tipped with white.
Eggs. 7—8, sometimes 10; 2·0-2·25 × 1·5-1·6. Greenish-white, tinged with buff. May.

PIPIT, MEADOW : *Anthus pratensis.*

A common resident throughout the British Isles, especially in low-lying marshy pastures, and on commons near the sea.

Situation. On the ground, generally on a bank, and well protected by a tuft of grass or rank herbage ; sometimes among the grass in a meadow.

Materials. Moss, dry grass, bents, and the seed-stalk of *Cardamine pratensis*, neatly lined with very slender bents, rootlets, or horsehair.

Eggs. 5—6, 0·75-0·85 × 0·55-0·62. Pale bluish- or brownish-white, but the ground-colour is so densely mottled, dashed, and speckled with brown, that it is seldom, if ever, visible. The brown has often a purplish tinge, but otherwise the colouring is not very variable ; fine hair-like markings are generally found on the larger end ; with this species, as with the Tree Pipit, the parent bird frequently feigns lameness in order to draw an intruder away from her nest. May and June ; two broods are commonly reared.

PIPIT, ROCK : *Anthus obscurus.*

A common resident, though confined to the sea-coasts ; it does not breed on the east coast of England, south of Spurn.

Situation. Crevices or ledges of sea-cliffs, under stones, or in a rabbit-burrow near the shore ; generally sheltered by a tuft of grass, sea-campion, or other shore-plant.

Materials. Coarse bents, sea-weed, and sometimes moss on the outside ; finer bents and sometimes horsehair for the lining.

Eggs. 4—5 ; 0·8-0·9 × 0·6-0·66. Ground-colour pale grey, but usually quite obscured by a profusion of spots, dashes, and blotches of reddish- or greyish-brown, with generally a few fine hairlike black lines on the larger end ; the spots often crowded at the larger end, like those of the Meadow Pipit ; not very variable ; a good deal like those of the Meadow Pipit, but larger. End of April onwards ; two broods are commonly reared.

PIPIT, TREE : *Anthus trivialis.*

A fairly-common summer visitor, breeding in most well-cultivated and wooded parts of England ; it is scarcer in Scotland and Wales, and almost unknown in Ireland. This species is often confounded with the Meadow Pipit under the name of "Titlark," which name should be confined to the latter bird.

Situation. On the ground, generally on a bank, and sheltered by a tuft of grass or a bush.

Materials. Moss, fibrous roots, wool, grasses, lined with finer grasses and a little hair.

Eggs. 4—6 ; 0·7-0·9 × 0·58-0·65. Probably more variable than those of any other British land-bird ; sometimes pale brown, thickly dotted with deep brown spots, mostly forming a zone at the larger end ; sometimes deep brick-red, thickly sprinkled with dots of a deeper shade ; at other times a paler red, boldly spotted and streaked like the eggs of the Buntings ; others closely resemble the red variety of the egg of the Blackcap ; others, again, are very similar to one variety of the egg of the Common Sparrow ; every conceivable variation between these different forms is from time to time to be met with. May or June ; two broods are sometimes reared.

PLOVER, GOLDEN : *Charadrius pluvialis.*

A resident, though partially migratory ; common during winter almost throughout the British Isles, especially upon the coasts. It breeds sparingly in the extreme south-west of England and in a few parts of Wales, but commonly from Derbyshire northwards to the Shetlands, and in suitable places in Ireland.

Situation. On the ground, on mountain wilds, and high moors.

Materials. Very few ; merely a few fragments of heath or dry grass arranged in a slight hollow in the ground.

Eggs. 4 ; 1·95-2·2 × 1·3-1·5. Rich buff or yellowish-stone-colour, handsomely and boldly spotted and blotched (usually most round the larger end) with rich brownish-black ; pointed like those of the Lapwing, but distinguishable as a rule by their slightly larger size, less olive ground-colour, and richer markings. May; one brood only is reared.

PLOVER, GREAT, *see* CURLEW, STONE.

PLOVER, KENTISH: *Ægialitis cantiana.*

A rare and local visitor during spring and autumn to the east and south coasts of England. It breeds in limited and decreasing numbers on the coasts of Kent and Sussex.

Situation. On the sand or shingle of the shore.
Materials. None, the eggs being laid in a slight depression in the sand.
Eggs. 3—4; 1·15-1·35×0·85-0·95. Buffish-stone-colour to buffish-olive, spotted, blotched, and scrawled with blackish-brown and with faint inky-grey; distinguishable from those of the Ringed Plover by their smaller size, darker ground-colour, and peculiar streaky markings, and from those of the Lesser Tern by their shape. Distinct. May; one brood only is reared.

PLOVER, NORFOLK, *see* CURLEW, STONE.

PLOVER, RINGED: *Ægialitis hiaticula;* also RINGED DOTTEREL.

A common resident on all parts of the coast of the British Isles and in some inland situations. It breeds in most suitable places on the coast, and at some inland situations, as, for instance, the warrens of Norfolk and Suffolk.

Situation. A slight hollow scratched in the sand or shingle of the sea-shore, sometimes inland.
Materials. None, except sometimes a very scanty lining of dry grass; sometimes the nest is said to be paved with small stones.
Eggs. 4; 1·3-1·55 × 0·98-1·05. Pale buff or cream-colour, spotted with dark-brown and with faint inky-grey, generally most round the larger end; very pointed in shape. Distinct. April and May.

POCHARD: *Fuligula ferina.*

Best known as a common winter visitor, but is also a resident, a fair and increasing number remaining to breed in Norfolk, Dorsetshire, Yorkshire, Lancashire, and elsewhere in England, Scotland, and Ireland.

Situation. On a tussock of grass, generally near a lake or swamp, and well concealed among growing reeds or sedge.

Materials. Dry grass and sedge, lined with the bird's own down, which is of a greyish-black, with obscure white centres, and browner than that of the Tufted Duck.

Eggs. 7—10, sometimes 13; 2·2-2·45 × 1·65-1·75. Pale greenish-buff. May.

PTARMIGAN: *Lagopus mutus.*

A common resident on the higher moors and mountain-tops of Scotland, chiefly in the Highlands and western islands from Arran northwards; unknown in the Orkneys and Shetlands.

Situation. On the ground on stony mountain-tops; a slight hollow merely.

Materials. None, except a few heather-twigs and blades of dead grass.

Eggs. 8—10, sometimes 12; 1·65-1·8 × 1·15-1·26. Dirty yellowish-white, blotched, spotted, and speckled with rich dark brown; like those of the Red Grouse, but the spots are less numerous and the ground-colour usually more buff. May; one brood only is reared.

PUFFIN: *Fratercula arctica.*

A common summer visitor to the coasts of Britain, breeding plentifully in colonies in many localities where there are grassy slopes or rocky cliffs suited to its habits. Its breeding haunts are chiefly on the northern and western coasts and isles of Scotland, on the coasts of Wales and Ireland, on the Isle of Anglesey, Lundy Island, the Scilly Islands, the Isle of Man, &c., &c. On the east coast of England, Flamborough Cliffs and the Farne Islands are said to be its only breeding-places.

Situation. A slight hollow at the end of holes and burrows in the ground; often in the burrows of rabbits, from which the bird drives the rightful owner, though the hole is usually made by the birds themselves; generally in the turf near the tops of cliffs ; often in clefts and crannies in rock-cliffs, or in holes beneath large masses of rock.

Materials. Often none ; sometimes a little grass or a few roots.

Egg. 1 ; 2·2-2·6×1·6-1·75. Pale bluish-white, very faintly blotched or spotted with pale brown or grey ; the egg very soon becomes discoloured through coming in contact with the earth. Distinct. Early in May.

QUAIL : *Coturnix communis.*

A sparingly-distributed species throughout the British Isles, though nowhere common. It is chiefly a summer migrant, though also partially resident. It has been known to breed in many districts, but can never be counted upon to do so with any regularity.

Situation. A slight hollow in the ground ; generally in corn-fields, among green corn ; sometimes in fields of grass or clover ; not generally under hedges.

Materials. None, except a few blades of growing corn and a dead leaf or two.

Eggs. 8—12, sometimes 16 or 20 ; 1·1-1·2 × 0·82-0·92. Creamy, or yellowish-white, more or less thickly and boldly blotched and spotted with olive-brown and rich blackish-brown. Distinct. June.

RAIL, LAND, *see* CRAKE, CORN.

RAIL, WATER : *Rallus aquaticus.*

A resident in swamps and marshes in most parts of the British Isles, though somewhat local, and nowhere abundant ; partially migratory in some districts ; its skulking habits make it appear less common than it really is.

Situation. On the ground, among the densest reed-patches in swamps or osier-grounds.

Materials. The dead leaves of reeds, sedge, and flags.

Eggs. 5—7, sometimes 11 ; 1·28-1·5 × 0·98-1·09. Creamy or buffish-white, sparingly spotted or speckled, and generally most at the larger end, with reddish-brown, and with underlying markings of ash-grey ; like those of the Land Rail, but smaller, and generally less spotted. April onwards ; two broods are probably reared.

RAVEN : *Corvus corax.*

A once-common bird, now so greatly lessened in numbers by persecution as to be approaching extinction in most parts of England, though still a not uncommon resident in some of the wilder parts, and even yet numerous in some portions of the west of Scotland and in Ireland.

Situation. Tops of lofty trees, or crevices of sea-cliffs and other almost inaccessible rocky precipices.

Materials. Sticks of various sizes and roots, lined with wool and hair ; often a very large structure, especially when built in trees.

Eggs. 5—6 ; 1·7-2·1 × 1·25-1·4. Bluish-green or light greenish-brown, more or less thickly splashed, blotched, and streaked with dark olive-brown, and with a smaller number of faint greyish-purple markings ; some specimens are much marked, while others are almost or quite unspotted ; like those of both the Rook and Crow, but larger, though still small for the size of the bird ; decidedly variable in size and colour. February ; one brood only is reared.

RAZORBILL : *Alca torda.*

A very common resident on the British sea-coast. In the breeding-season it collects in thousands wherever the sea-cliffs are sufficiently precipitous to afford it nesting sites. It breeds abundantly at many places round the coast of Ireland, and on the west coasts of England and Scotland, and at some places on the east coast of the two latter—for instance, at Flamborough.

Situation. In crannies in precipitous sea-cliffs ; sometimes in holes or on rock-ledges.

Materials. None.

Egg. 1 ; 2·7-3·1 × 1·7-1·95. Very variable, both in size and colour, but less so than those of the Guillemot. The ground-colour varies from pure white to light reddish-brown (seldom, if ever, green), and it is blotched or spotted (or occasionally more or less streaked) with dark reddish-brown, almost black ; the markings are often confluent at the larger end ; less sharply pointed than those of the Guillemot, from which they may also be distinguished by the fact that when the empty eggs are held up against the light, the lining of those of the Razorbill is seen to be greenish, while that of the eggs of the Guillemot is yellowish-white, unless overpowered by the green of the outer shell. Mid-May onwards; a single young one only is reared.

REDBREAST, *see* ROBIN.

REDPOLL, LESSER: *Linota rufescens.*

Resident in Scotland and in England, north of Leicestershire, breeding more or less commonly. South of the Midlands it is best known as a fairly-common winter visitor, though it has been known to breed from time to time in most counties, except those in the extreme south and south-west.

Situation. In the alders, willows, and sallows which so often fringe the streams and ponds in mountain or lake districts; also in low bushes or hedges.

Materials. Small twigs, dry grass and moss outside, lined with the down of the willow-catkins or of the cotton-grass; at times also with hair or feathers; a choice little nest.

Eggs. 4—5 or 6; 0·6-0·65 × 0·42-0·5. Very pale blue-green, speckled and spotted (chiefly about the larger end) with reddish-brown and faint greyish-brown, occasionally almost or quite unspotted. May and June.

REDSHANK: *Totanus calidris.*

A common resident, especially on the coasts during winter, when many arrive from abroad. It breeds in many suitable situations throughout the British Isles, especially round the coast of the Eastern counties, but very frequently inland.

Situation. On a tussock of grass, or in a clump of grass, heather, or sedge, on open marshy commons or saltings; generally well concealed by herbage.

Materials. A few blades of dry grass, a little moss or a twig or two of heather; often nothing but the grass or sedge growing round the nest trodden down by the birds.

Eggs. 4; 1·65-1·9 × 1·17-1·3. Pale stone-colour, or buffish-brown, spotted and blotched (usually most upon or round the larger end) with rich dark brown of two shades, and with underlying grey markings; somewhat like those of the Ruff, but yellower. Distinct. April and May: one brood only is reared.

REDSTART: *Ruticilla phœnicurus.*

A regular summer visitor. Though somewhat local, and nowhere very common, it is widely distributed, and breeds in every county in Great Britain; very rare in Ireland.

Situation. Holes in walls, rocks, trees, barns, stables, &c. Very odd situations are sometimes chosen. The Rev. J. C. Atkinson records (*Zoologist*, p. 335) that "One day, having occasion for a flower-pot, not of a very large size, I took one which had been left inverted in a narrow path between two sea-kale beds. On lifting it up I discovered a Redstart's nest with five eggs placed on the ground. I carefully replaced the pot over the nest, inclining it a little towards the south, so that when the sun was shining I could just discern the eggs through the hole at the bottom (now, from its inverted position, the top) of the pot. On passing it soon after, I found the hen bird was on the nest; and she succeeded in hatching and bringing up her brood; paying no regard to my looking down upon her as I passed by, if I did not stop."

Materials. Moss, dry grass, and roots, lined with hair and feathers; usually loosely constructed.

Eggs. 5—6, occasionally 8; 0·7-0·8 × 0·5-0·57. Pale greenish-blue, like those of the Hedge Sparrow, but lighter in tint and more fragile, sometimes with a few faint red specks. May to July; two broods sometimes are reared.

REDSTART, BLACK: *Ruticilla titys.*

A regular winter visitant, though very uncommon, except in the south-western counties. It is said, but on no satisfactory evidence, to have bred in England.

Situation. Holes in rocks, trees, walls, and roofs of buildings, under heaps of stones; very curious sites are sometimes chosen.

Materials. Grass, moss, and leaves, lined with hair, wool, or feathers.

Eggs. 4—5, occasionally 7 ; 0·7-0·83 × 0·6-0·56. Pure white, said to be occasionally minutely spotted ; highly polished. May ; two broods are often reared.

REDWING : *Turdus iliacus.*

A common winter visitor, which is recorded, though very rarely, and on doubtful authority, to have bred in the British Isles.

Situation. In thick bushes or small trees, often in small fir-trees ; occasionally on the ground.

Materials. Twigs, bents, and moss, plastered with mud, and lined with grass.

Eggs. 4—6 ; 0·9-1·1 × 0·7-0·8. Pale greenish-blue, very thickly marbled, streaked, or blotched uniformly all over with greenish-brown ; sometimes the ground-colour is almost or quite unspotted ; not variable, and easily recognizable. May ; two broods are often reared.

RING-OUZEL : *Turdus torquatus.*

A common summer visitor to all wild mountainous and moorland districts north of Derbyshire and throughout Ireland. In England, south of Derbyshire, it is seen as a regular passing migrant in spring and autumn, but it remains to breed in some suitable situations—notably Dartmoor ; its nest has also been taken, though not very commonly, in some of the midland and eastern counties.

Situation. On the ground, on steep banks, in clefts of rocks, and among low bushes or heather. Mr. Evans, of Coventry, has given (*Zoologist*, p. 2142) a very minute account of its breeding in Warwickshire. The bird is often very courageous when its nest is threatened.

Materials. A few twigs of heather, moss bents, and roots, plastered with mud, and lined with fine grasses ; the nest is very like that of the Blackbird.

Eggs. 4—5 ; 1·8-1·35 × 0·78-0·9. Bluish-green in ground-colour, blotched and spotted with reddish-brown ; in some cases they approach so closely to those of the Blackbird as to be indistinguishable, but as a rule they are more boldly and richly marked. The end of April; later broods are probably reared.

ROBIN : *Erythacus rubecula;* also REDBREAST.

An abundant resident almost everywhere.

Situation. Quite on the ground on banks, but generally protected by roots, or in a cavity, or under ivy. Many other and very strange situations, too numerous to enumerate here, have been recorded from time to time; for instance, the Rev. J. C. Atkinson mentions (*Zoologist*, p. 565) an instance of a pair of robins building in a watering-pot, and Mr. Clibborn records (*Zoologist*, p. 1368) the extraordinary fact of a pair of robins nesting in a human skull; there seems, in fact, to be scarcely any possible situation for the nest which this bird will not make use of.

Materials. Dead leaves, moss, and the stalks of grass and other plants, neatly lined with hair or rootlets, and sometimes a little wool; large, the outer part rather rudely constructed.

Eggs. 5—6, occasionally 8; 0·7-0·9×0·56-0·65. Creamy-white, variously (and, as a rule, thickly) blotched, spotted, and freckled (chiefly at the larger end) with reddish-brown, and sometimes with dashes of grey; sometimes entirely unspotted; surface very glossy. Early spring to late summer; several broods are generally reared.

ROOK : *Corvus frugilegus.*

An extremely abundant resident, breeding throughout the whole of the United Kingdom, except in the most northerly isles.

Situation. Among the topmost branches of tall trees, generally in woods or plantations surrounding country mansions, but not uncommonly in large towns, even in the heart of London itself; nests have occasionally been known on buildings and even upon the ground, but these are altogether exceptional; nearly always large numbers of nests are found together; new rookeries may sometimes be started by fastening up old nests in the trees where it is desired the rooks should build, or by placing

Rooks' eggs in Magpies' nests, if any happen to be built in the trees in question.

Materials. Sticks and small twigs, plastered with mud and clay, and lined with straw, grass, wool, and other soft substances ; the old nest is repaired from year to year, and often attains a very large size in consequence.

Eggs. 4—5 ; 1·55-1·8 × 1·05-1·25. Light brownish-green, of varying shades, sometimes very light, with blotches, dashes and spots of greenish-brown and a smaller number of spots of dark brown. March and April ; one brood only is reared. The old birds may often be seen at their nests, and they sometimes lay eggs, late in the autumn.

RUFF : *Machetes pugnax.*

A not uncommon bird as a passing migrant in spring and autumn. It formerly bred abundantly in many marshy and fenny districts throughout England ; but, on account of the extensive draining of its favourite breeding-haunts, it does so no longer, except, possibly, on rare occasions in Norfolk and Lincolnshire.

Situation. On a stump or tussock in the midst of a wet swamp, generally well hidden by overhanging grass or rushes.

Materials. Very few ; generally no more than a few dead leaves of grass or sedge.

Eggs. 4 ; 1·6-1·8 × 1·15-1·3. Light olive-brown, or greenish-grey, blotched and spotted (usually most round the larger part of the egg) with dark reddish-brown and pale grey ; sharply pointed. June.

SANDPIPER, COMMON : *Tringoïdes hypoleucus.*

A fairly-common summer visitor to the whole of Great Britain and Ireland. It breeds more or less abundantly in high-lying moorland districts to the north and west of a line drawn across England through Hull and Bristol, but to the south and east of that line it is known almost wholly as a passing migrant in spring and autumn.

Situation. A slight hollow in the sandy or gravelly banks of rivers or lakes, generally not far from the edge of the water, and more or less hidden by a tuft of grass or other herbage; occasionally in corn- or turnip-fields.

Materials. Very few; a little dried grass, sedge, or moss.

Eggs. 4; 1·4-1·6 × 1·0-1·13. Buff or yellowish-white, blotched, spotted, and speckled (chiefly at the larger end) with reddish-brown and with a few underlying spots of inky-grey; pyriform; very like those of the Green Sandpiper and Wood Sandpiper, but more cream-coloured and slightly smaller, as a rule, than those of the former bird. May; one brood only is reared.

SANDPIPER, WOOD: *Totanus glareola.*

An irregular visitor to the coasts of Great Britain during the spring and autumn migrations. It is only known with certainty as yet to have bred once in England, namely, in Northumberland in 1853, but has possibly done so on other occasions.

Situation. A slight hollow in the ground, more or less concealed by grass or sedge, and generally near marshes.

Materials. A few dry grasses or leaves of sedge.

Eggs. 4; 1·4-1·55 × 1·0-1·1. Creamy-white or pale olive, blotched and spotted (usually most round the larger part) with dark rich reddish-brown, and with underlying purplish-grey markings. End of May.

SCAUP: *Fuligula marila.*

A common winter visitor to the whole of the coast-line of the United Kingdom; seldom seen inland. It is almost certain that it breeds occasionally in the Highlands, but positive evidence of its having done so is still wanting.

Situation. On the ground or on a sloping bank, generally near water, and well concealed by grass, bushes, or other herbage.

Materials. Dry grass and sedge, lined with down, which is dark brown, without white tips, but with pale centres.

Eggs. 6—9; 2·4-2·7 × 1·65-1·75. Pale greenish-buff; like those of Pochard and Tufted Duck, except for a slight difference in size, and, as a rule, deeper buff.

SCOTER, COMMON : *Œdemia nigra;* also BLACK SCOTER.

A common winter visitor to most parts of the coast of the United Kingdom. It breeds regularly, though in limited numbers, in two or three of the most northerly Scotch counties.

Situation. Usually on an island in the sea or a lake near it, more or less concealed among scrubby bushes, grass, or other coarse herbage.

Materials. A few twigs, dry grass, and dead leaves, lined with down, which is very like that of the Mallard, but slightly darker.

Eggs. 6—8, sometimes 9 ; 2·4-2·65 × 1·75-1·8. Pale greyish-buff ; smooth-shelled, but not glossy. Early in June.

SCOTER, BLACK, *see* SCOTER, COMMON.

SHAG : *Phalacrocorax graculus.*

A common resident round the British coasts, though less abundant and more local than the Cormorant. It breeds in numbers in many places on the western and northern coasts and isles of Scotland, round the coasts of Ireland, on the cliffs on the coasts of Dorsetshire, Lundy Island, the Scilly Isles, Wales, and some other places. At some of its breeding stations it is more numerous than the Cormorant. It never breeds in inland situations.

Situation. Caves, holes, and other apertures in, and ledges on, the face of rocky sea-cliffs ; numbers generally breed close together ; the nesting-places usually have a very disgusting smell, owing to the droppings of the birds.

Materials. Sticks, sea-weed, pieces of turf, twigs of heather, grass, &c. ; a very bulky structure.

Eggs. 4—5, sometimes more ; 2·3-2·6 × 1·4-1·6. Pale blue-green, as may be seen when the empty shell is held up to the light, but they are thickly encrusted with a white chalky substance which may be readily scraped off with a knife ; generally elongated and about equally pointed at both ends ; indistinguishable from those of the Cormorant, except by their being usually slightly smaller. May and June.

SHEARWATER, MANX : *Puffinus anglorum.*

A not uncommon resident round the British coasts. It breeds on various islands around the Irish coast, and on others off the western coasts of England and Scotland, from the Scillys to the Shetlands, but the number of its breeding places seems to be decreasing; on the east coast of England and Scotland it is not known to breed.

Situation. Holes beneath rocks, or underground, often of great length, and inaccessible from their passing under masses of rock.

Materials. Often none; but at times a few dry stalks or a little bunch of grass.

Egg. 1; 2·3-2·5 × 1·55-1·75. White; smooth, but not glossy; almost equally blunt at both ends; slightly musky in smell. May and June; one young one only is reared.

SHELDRAKE, COMMON, *see* SHELDRAKE.

SHELDRAKE : *Tadorna cornuta;* also COMMON SHELDRAKE or BURROW-DUCK.

A resident on the shores of the British Isles, though nowhere abundant, and decreasing in numbers. It breeds in many sandy places on the sea-shore, especially in the north of England and Scotland.

Situation. In burrows in the sand, sometimes as much as twelve feet in length; generally those of the rabbit are used, but sometimes those of other animals, and occasionally the burrow is made by the bird itself.

Materials. Dry bents, leaves of sedge or grass, and a little moss, lined with the softest down plucked from the breasts of the birds themselves, and of a pale lavender-grey colour; a slight nest; several are often found near one another.

Eggs. 7—12, occasionally 16; 2·5-2·75 × 1·9-2·0. Creamy-white; smooth-shelled; almost equally rounded at both ends. May ; one brood only is commonly reared.

SHOVELLER : *Spatula clypeata.*

A fairly-common winter visitor to almost all parts of the British Isles. It still breeds regularly, though nowhere in large numbers, in not a few suitable localities, especially in the eastern counties of Scotland and the northern and south-eastern counties of England.

Situation. On the ground in the open, but well concealed by a tuft of grass or a clump of heather.
Materials. Dry grass and sedge, lined with the softest down, which is of a dark neutral-grey colour, with faint white tips.
Eggs. 7—9, sometimes 12 ; 1·8-2·2 × 1·4-1·6. Pale greenish-buff. May.

SHRIKE, RED-BACKED : *Lanius collurio.*

A common, though local, summer visitor ; most numerous in the south-eastern counties, but extending as far north as Yorkshire and as far west as Cornwall.

Situation. In tall whitethorn hedges, furze bushes, &c. ; often very ill-concealed.
Materials. Moss, bents of grass, and dead plant-stems, lined with hair, rootlets, and often a little wool ; very large for the size of the bird ; often as much as six or seven inches in diameter.
Eggs. 5—6 ; 0·8-0·95 × 0·62-0·7. Very variable ; the ground-colour sometimes pale yellowish-white, sometimes buff or greenish ; the spots and blotches may be either olive-brown or salmon-coloured, or some intermediate colour, and there are usually also some under-markings of grey ; the markings generally form a zone round the larger end. Distinct. Early in June ; one brood only is reared.

SHRIKE, WOODCHAT : *Lanius pomeranus.*

A rare and accidental visitor to England when on migration, though it is said to have twice bred in the Isle of Wight.

Situation. In the fork of a small tree or large bush, generally in a more or less prominent place.

Materials. Small twigs, coarse grass-bents, and wool, lined with fine grass, leaves, &c.

Eggs. 4—6; 0·86-1·05 × 0·65-0·72. Very variable; pale green, buffish-white, or reddish-buff in ground-colour, spotted with either olive-brown, dark greenish-brown, or reddish-brown, and with faint grey under-markings.

SISKIN: *Chrysomitris spinus.*

A regular, though not very abundant, winter visitor to Great Britain; rarer in the extreme north and south-west; it breeds regularly in many localities in Scotland, especially in the eastern counties, and has been known to do so in more than a dozen English counties, as well as occasionally in Ireland.

Situation. Usually in fir or other coniferous trees, and generally in the fork of a horizontal branch at some distance from the trunk, and from twenty to twenty-five feet from the ground; very difficult either to discover or to take; it is said to have bred in England occasionally, in furze-bushes, about three feet from the ground.

Materials. Small twigs of fir or heather, rootlets, green moss, dried grass, rabbits' down, and sometimes a few feathers; like that of the Greenfinch, but smaller.

Eggs. 4—5; 0·62-0·7 × 0·5-0·53. Of a bluish ground-colour, some being spotted and others marked with rust-colour, either in well-defined dark spots about the larger end, or cloudily dispersed over the whole surface; quite indistinguishable from those of the Goldfinch. May to June; two broods are reared.

SKUA, COMMON: *Stercorarius catarrhactes;* also GREAT SKUA.

A not uncommon, though never an abundant, visitor during migration in spring and autumn to the coasts of the British Islands; less frequent westwards. Two very small colonies still breed on two of the Shetland Islands, where the birds are carefully protected.

Situation. On the ground on wild mountain heaths.

Materials. Moss, dry grass, and a few fragments of ling.

Eggs. 2, sometimes only 1 ; 2·7-3·0 × 1·9-2·0. Dark olive-brown, or dark stone-colour, blotched and spotted with darker brown and greyish-brown ; not unlike those of the Lesser Black-backed and Herring Gull, but the spots are usually duller and fewer. May.

SKUA, GREAT, *see* SKUA, COMMON.

SKUA, RICHARDSON'S : *Stercorarius crepidatus.*

The commonest British Skua ; it occurs frequently on the coasts (especially that of Scotland and the east of England) during the time of spring and autumn migration. It breeds, though rather sparingly, on the Hebrides, Shetlands, and Orkneys, as well as at a few spots in the extreme north of Scotland.

Situation. A slight depression in the ground on wild, open, heathy moorlands.

Materials. Very few ; a little dry grass and moss, and a few bents.

Eggs. 2, occasionally 1 or 3 ; 2·0-2·55 × 1·55-1·7. Greenish-olive or russet-brown, blotched and spotted in various ways with dark brown and faint grey ; very variable in shape. End of May.

SKY-LARK : *Alauda arvensis.*

A very common and well-known resident, though partially migratory, throughout the whole of the British Isles.

Situation. On the ground, in a slight depression, amidst standing grass or other herbage.

Materials. The dried stems of a variety of herbaceous plants, and a scrap or two of moss outside, lined with very fine grasses, root-fibres, and sometimes a few hairs ; a slight, though neat, structure.

Eggs. 3—5 ; 0·87-0·1 × 0·63-0·72. Dirty-white, sometimes faintly tinged with green, mottled, spotted, and freckled more or less thickly with olive-brown, and with underlying markings of pale grey ; the spots are generally so thick as to almost or quite conceal the ground-colour, and are often uniformly distributed, but as a rule they form more or less of a zone round the larger part of the egg ; not very variable, except perhaps in the shade of the markings. Distinct. April to June; two broods are commonly reared.

SNIPE, COMMON: *Gallinago cœlestis.*

A resident, breeding in fair numbers in waste swampy places throughout the United Kingdom, especially in Ireland. Its numbers are greatly increased in winter by the arrival of migrants from abroad.

Situation. A slight depression in the surface of the ground, on bogs, swamps, and wet heaths; usually concealed by a tuft of sedge or grass.

Materials. A few blades of dried grass or sedge.

Eggs. 4; 1·5-1·65 × 1·05-1·15. Olive, or brownish-buff, or yellowish-olive, blotched and spotted with rich dark brown and light brown, and with underlying grey markings; the blotches usually form a zone round the larger part of the egg; sometimes the markings take the form of streaks or scratches; pointed in shape. Distinct. April or early in May; a second brood is sometimes reared.

SPARROW, COMMON: *Passer domesticus;* also HOUSE SPARROW.

The commonest and most familiar of all our British birds; resident everywhere, even in the largest cities.

Situation. Extremely various; under the eaves of houses, barns, or stables; in water-pipes; holes in walls, rocks, and trees; the sides of quarries; holes (excavated by the birds themselves) in thatch (both inside and out); the tops of high whitethorn hedges; among the smaller branches of trees of almost all sorts and sizes; in the mud nests of the House Martin; the tops of fir-trees; among ivy growing on walls or trees; below Rooks' nests; sometimes in furze-bushes, and in almost every other conceivable situation; seldom far from houses.

Materials. Straw and dry grass, freely lined with feathers, and often with wool, hair, twine, pieces of rag or paper, and other odds and ends; a large, loosely-built, and untidy structure; domed and more strongly constructed when built among the branches of trees; not domed when built in holes.

Eggs. 5—6, occasionally 7; 0·8-0·95 × 0·57-0·65, sometimes much smaller. Dirty-white, generally with a greenish, though sometimes a bluish, tinge, speckled, spotted, dashed, and blotched in a great variety of ways, with dark brown, greyish-brown, and dull chestnut-brown; the greatest variety is in the style of the markings, not in the colour; the markings being sometimes uniformly distributed, at other times collected together chiefly at the larger end; some eggs are very profusely marked, while others are very slightly so; pure white specimens are not uncommon, especially late in the season; different varieties very closely resemble typical eggs of the Pied Wagtail, Tree Sparrow, Tree Pipit, and Meadow Pipit. April to August; an indefinite number of broods are reared.

SPARROW, HEDGE, *see* HEDGE-SPARROW.

SPARROW, HOUSE, *see* SPARROW, COMMON.

SPARROW, REED, *see* BUNTING, REED.

SPARROW, TREE: *Passer montanus.*

A resident, though very local, and nowhere abundant; it breeds locally in many parts of England, in the eastern portion of Scotland, and very sparingly in two or three Irish localities, though it has not yet been known to do so in the west of Scotland or in Wales.

Situation. In the holes of pollard and other trees that have gone to decay, especially old pollard willows; more rarely in holes in the thatch of old barns, &c., always on the outside; and in crevices in rocks, as in stone-quarries, &c.

Materials. Hay and straw, lined with feathers, wool hair, the flowering tops of reeds, &c.; the top is domed over when the situation requires it.

Eggs. 4—5, sometimes 6; 0·73-0·85 × 0·54-0·62. Dirty-white or faint grey, thickly, and as a rule uniformly, dashed and spotted over with dark greyish- or umber-brown; not unlike those of the Meadow Pipit; there is usually one egg in a clutch which is lighter than the rest. April onwards; two or more broods are often reared.

SPARROW-HAWK : *Accipiter nisus.*

A more or less common resident in all well-wooded districts throughout the United Kingdom, though its numbers are fast being lessened by incessant persecution.

Situation. Large trees in woods and plantations; generally in a fork, either of the main trunk or one of the larger branches. The oft-repeated statement that it generally adopts the deserted nest of a Crow or Magpie seems to be only partially true, if true at all.

Materials. Sticks and twigs, lined sparingly with rootlets and moss.

Eggs. 4—5, sometimes 6; 1·5-1·78 × 1·2-1·39. White, with a faint blue tinge, and boldly marked with large and decided blotches of a fine rich reddish-brown; in some cases the blotches are few in number or quite absent; usually they form more or less of a zone round the larger end, but are often pretty uniformly distributed; occasionally almost, or quite, unspotted; they can hardly be confounded with those of any other British bird. Distinct. May and early June; one clutch only is laid when the nest escapes molestation.

SPOONBILL : *Platalea leucorodia.*

Once a fairly-common resident, but now only an occasional straggler to the British Isles, chiefly in spring and autumn. In the sixteenth century it bred in Norfolk, Suffolk, Essex, Sussex, Middlesex, and probably in other counties. (See 'Zoologist,' 1877, p. 425, and 1886, p. 81.)

Situation. On grassy tussocks; on low alders and trees; sometimes at a good height from the ground; frequently in heronries.

Materials. A few sticks and a quantity of dead reeds, lined with dry grass.

Eggs. 4—5; 2·2-2·9 × 1·7-1·9. Dull chalky-white, sparingly spotted and blotched (chiefly at the larger end) with reddish-brown; very variable in shape. Distinct. April; one brood only is reared.

STARLING : *Sturnus vulgaris.*

Resident throughout the British Isles; common, and rapidly becoming more so; less abundant in the extreme west of England; local in Ireland.

Situation. In hollow trees, holes in the walls of ruins, sea-cliffs, &c.; more commonly in houses, entering a hole under the eaves; often in dove-cotes and in the holes of the Sand Martin or Woodpecker; in the northern isles of Scotland it is said to build in rats' holes, rabbit-burrows, under stones on the beach, in peat-stacks &c.; all sorts of situations, in fact, seem to suit it.

Materials. Sticks, straw, and dry grass, lined with feathers, wool, twine, paper, moss, rags, and any other odds and ends obtainable; a loose, slovenly nest.

Eggs. 4—6; 1·1-1·25 × 0·81-0·88. Delicate pale blue, unspotted; occasionally almost white; elongated in shape; rough, but shiny; they are often laid singly on the ground on garden paths, &c. Distinct. May to June; two broods are sometimes, though not always, reared.

STONECHAT: *Pratincola rubicola.*

A resident in most parts of Great Britain, though partially migratory. It is less common than the Whinchat, and more exclusively confines itself to furze-covered commons; it is, therefore, decidedly local, though it is said to breed in all the counties of Great Britain.

Situation. On or very near the ground, generally at the bottom of a furze or other bush; always very cunningly concealed.

Materials. Moss and dry grass; the lining, feathers, hair, and sometimes fine grass, with a little wool; often very neatly constructed.

Eggs. 4—6, occasionally 7; 0·65-0·75 × 0·55-0·59. Pale blue-green, with reddish-brown spots, chiefly at the larger end; variable, but usually more marked than those of the Whinchat, though sometimes almost or quite unspotted. End of April or early in May; one brood only is usually reared in a season.

SWALLOW: *Hirundo rustica.*

An abundant summer visitant.

Situation. The interior of chimneys in some districts, but more commonly on the sides of beams in sheds, stables, barns, and other out-houses; sometimes in the disused shafts of mines, in old wells, or beneath bridges;

not unfrequently on articles of furniture in dwelling-houses; occasionally in caves, or on cliffs or trees.

Materials. Pellets of mud or clay, mixed with straw and hay, and lined with feathers; a rather large, loosely-built nest; always open at the top; it has less of the neatness for which the nest of the Martin is so remarkable.

Eggs. 4—6; 0·75-0·9 × 0·52-0·58. White, spotted or speckled with rich coffee-brown and light reddish-brown, generally forming a distinct zone at the larger end; the only British species of the family that has speckled eggs. May to July; two broods at least are usually reared.

SWAN, MUTE: *Cygnus olor.*

Common in a more or less domesticated state throughout the British Isles, and usually regarded as a British bird, though probably introduced many centuries ago.

Situation. The edge of a lake; often on a small island.

Materials. Reeds, rushes, and other water-plants; often a very large structure.

Eggs. 6—7; 4·3-4·9 × 2·8-3·1. Greenish-white, unspotted; not glossy; almost equally pointed at both ends. Distinct. April and May.

SWIFT: *Cypselus apus.*

A common summer visitor throughout the United Kingdom.

Situation. Holes in the towers and steeples of churches and other ancient buildings; holes in chalk-pits and rocky cliffs; often under the eaves of inhabited houses; occasionally, it is said, in trees. The nest is generally very inaccessible, either from its height above the ground or from the nature of the hole in which it is placed.

Materials. Straw, dry grass, and other vegetable substances, lined with feathers, the whole being very small, frail, and almost flat; the materials of which it is constructed are collected by the birds whilst upon the wing, and are cemented together with the viscid saliva secreted by the birds; this hardens like glue, and the nest becomes solid and caked together.

Eggs. 2—3, occasionally 4; 0·93-1·08×0·62-0·7. White, unspotted; very elongated in shape; almost equally pointed at both ends ; rough in texture and with very little gloss. Distinct. End of May or early in June ; one brood only is reared.

TEAL : *Querquedula crecca.*

A resident, though local, and more abundant with us in winter than in summer. It breeds more or less sparingly in suitable situations throughout the British Isles, though less frequently in the south of England than elsewhere.

Situation. On the ground, often in bogs, and well concealed among rushes, bushes, or other herbage.

Materials. Dead flags, reeds, and rushes, lined with the birds' own down and a few feathers ; the down is small in size and brown in colour, but has no white tips.

Eggs. 8—10, sometimes 12 ; 1·6-1·8 × 1·3-1·4. Buffish-white, sometimes faintly tinged with green. May.

TERN, ARCTIC : *Sterna macrura.*

A common summer visitor to the coasts of the British Isles, especially northwards and westwards, in which localities it outnumbers the Common Tern. It breeds abundantly in many places round the Irish and Scotch coasts and on the northern isles, on the Farne Islands, at the mouth of the Humber, on the coasts of Cumberland and Wales, and in smaller numbers on the Scilly Isles ; on the east coast south of the Humber and on the south coast east of Dorsetshire, it does not breed.

Situation. A slight depression scratched in the sand, gravel, or shingle of the beach, near the water's edge ; a nesting-site on a small uninhabited island is usually preferred to one on the mainland ; the birds generally breed more or less in colonies.

Materials. Very few, if any ; sometimes a few dried grasses or scraps of seaweed are used.

Eggs. 2—3 ; 1·45-1·6 × 1·1-1·2. Greyish or brownish-buff, blotched and spotted with dark brown (almost black) and with faint grey ; very like those of the Roseate Tern and the Common Tern, but, as a rule, slightly smaller, more boldly blotched, and the ground-colour often more tinged with olive than those of the latter. Early in June ; only one brood probably is reared.

TERN, BLACK : *Hydrochelidon nigra.*

Now only a passing visitor in spring and autumn when on migration, though fifty years ago it bred abundantly in Romney Marsh, the Norfolk Broads, the Lincolnshire fens, and a few other places from which it has now been driven by the draining of its haunts.

Situation. On mud-flats, floating weeds, or low marshy islands in lakes.

Materials. Decaying stems of weeds, sedges, horsetails (equisetums), and other water-plants ; the nests are placed more or less in colonies.

Eggs. 3 ; 1·3-1·46 × ·9-1·05. Olive, pale brown, or greyish-buff in ground-colour, thickly blotched and spotted (especially at the larger end) with dark reddish-brown (almost black) and faint grey. June.

TERN, COMMON : *Sterna fluviatilis.*

A regular summer visitor to the entire coastline of the United Kingdom. It breeds in many suitable places, but especially round the coasts of England (south of the Humber), Wales, and Ireland, where it usually outnumbers the Arctic Tern, which, however, is the more abundant bird of the two on the Scotch coast.

Situation. A slight hollow scratched in the sand or shingle close to high-water mark ; generally on the coast, but sometimes round inland lakes ; the nests are usually found in colonies.

Materials. Usually none, though a few dry bents are said sometimes to be used.

Eggs. 2—3 ; 1·5-1·8 × 1·15-1·3. Yellowish-stone-colour or greyish-buff, blotched and spotted with dark brown (almost black) and faint grey ; very like those of the Roseate Tern and Arctic Tern, but as a rule slightly larger and less boldly marked than those of the latter. May and June.

TERN, LESSER, *see* TERN, LITTLE.

TERN, LITTLE : *Sterna minuta ;* also LESSER TERN.

A regular, though not very abundant, summer visitor, breeding in many small colonies in suitable places on almost the entire coastline of the British Isles, and in some inland localities, though apparently in decreasing numbers.

Situation. A slight hollow scratched in a shingly or sandy beach.
Materials. None.
Eggs. 3, occasionally 4; 1·2-1·3 × 0·9-1·0. Pale greyish or dark buff or yellowish-stone-colour, spotted and speckled (usually most at the larger end) with dark chestnut-brown and pale grey; exactly like those of the Common and Arctic Terns, but smaller. June.

TERN, ROSEATE : *Sterna dougalli.*

An uncommon summer visitor, now rapidly decreasing in numbers. It used to breed sparingly (and may possibly do so yet) on the Farne and Scilly Islands, on certain islands off the coast of Lancashire, and on others round the coast of Scotland, but no reliable evidence of its still doing so is in existence.

Situation. A slight hollow scratched in the sand or shingle; always on islands, and usually on uninhabited ones.
Materials. None, except sometimes a few dry bents.
Eggs. 2—3. Indistinguishable from those of the Common and Arctic Terns.

TERN, SANDWICH : *Sterna cantiaca.*

A regular, though not an abundant and probably a decreasing, summer visitor to many parts of the United Kingdom. It still breeds in some numbers on the Farne Islands and in lesser numbers on the Scilly Islands, Walney Island, the coast of Cumberland, and also in various spots on the Scotch and Irish coasts, and in some inland situations.

Situation. A slight hollow scratched in the sand or shingle.
Materials. None, except sometimes a few dry bents.
Eggs. 2—3; 1·9-2·3 × 1·3-1·5. White, creamy-white, or brownish-buff, very boldly and handsomely, though variably, spotted and blotched with dark brown (almost black), and with underlying pale grey markings; not easily confused with the eggs of any other British bird. Distinct. Early in June; one brood only is reared.

THICKNEE, *see* CURLEW, STONE.

THRUSH, COMMON, *see* THRUSH, SONG.

THRUSH, MISSEL: *Turdus viscivorus;* also MISTLETOE THRUSH.

A common and increasingly-numerous resident throughout the British Isles, though rarer in the north and west.

Situation. Trees in orchards, woods, or gardens; generally in a very conspicuous situation, either in a fork of the main trunk, or on one of the larger branches; very seldom among the smaller twigs or in bushes, though at very varying heights; sometimes among ivy. The old birds are always very noisy when their nest is approached, and are very courageous in driving cats, egg-eating birds, and other intruders away from it.

Materials. Small twigs, grass-bents, roots and stems of plants, moss, wool, and lichens outwardly, often plastered more or less with mud, and always abundantly lined with fine grasses; often a very untidy structure.

Eggs. Generally 4, sometimes 6; 1·3-1·32 × 0·8-0·94. The ground-colour varies from greenish to reddish-white, and is blotched and spotted with reddish-brown, intermixed with fainter reddish-grey markings; markedly variable. March onwards.

THRUSH, SONG: *Turdus musicus;* also THRUSH, or COMMON THRUSH.

An abundant and well-known resident throughout almost the whole of the British Isles, especially in wooded and well-cultivated districts.

Situation. Hedgerows, shrubberies, and bushes of all kinds; evergreens, such as the holly, laurel, yew, and ivy, are very often selected on account of the shelter they afford at the very early season of the year at which this bird begins to breed; very often, too, the nest is placed against, or in the fork of, the main trunk of a tree, on a beam in an outhouse, in a hole in a rocky bank, and in many other odd situations—sometimes, even, on the ground.

Materials. The outer portion is constructed of coarse grass-bents and roots, with a few twigs and a little moss;

the interior is strongly and thickly plastered with mud or cow-dung, with which decayed wood is generally mingled ; always without any further lining of grass. Some nests are even, to a certain extent, water-tight.

Eggs. 4—6 ; 0·95-1·16 × 0·7-0·9. Deep greenish-blue with small distinct rounded spots, chiefly on the larger end, of intense purplish- or reddish-black, but sometimes brown; occasionally there are no spots ; smooth-shelled and glossy. Several rather striking variations have been recorded—one having a pure white ground-colour, with dark red spots. Distinct. February or March to June or July ; several broods are reared.

TIT, BEARDED : *Panurus biarmicus.*

A scarce resident in the fenny parts of Norfolk and Cambridgeshire, and perhaps in some other counties, but rapidly becoming rarer, on account of the draining of its haunts.

Situation. Large beds of reeds, as in the Broad district of Norfolk ; near the ground ; concealed in a tuft of sedge ; not suspended between reed-stems.

Materials. Dry leaves of reed and sedge, intermixed with grass, and lined with the flower of the reed.

Eggs. 4—6, sometimes 7 ; 0·65-0·75 × 0·53-0·6. White, slightly suffused with brown, and sparingly marked with short wavy streaks and specks of dark brown ; glossy. Early in April to middle of June ; more than one brood is reared.

TIT, BLUE : *Parus cæruleus.*

An abundant resident ; breeds everywhere.

Situation. Holes in trees, banks, roofs, or walls ; very strange situations have been constantly recorded, as in disused pumps, letter-boxes, holes in lamp or gate-posts, inverted flower-pots, &c., &c.

Materials. Moss and dry grass, profusely lined with feathers, hair, and wool ; loosely constructed.

Eggs. 7—9, occasionally 12 or more ; 0·55-0·7 × 0·42-0·5. White, spotted and speckled with faint red-brown, usually most at the larger end. Early in May to June.

TIT, COAL : *Parus britannicus.*

A common resident ; it breeds in all suitable localities, and is becoming more numerous than it used to be.

Situation. In banks, in the deserted hole of a rat, mole, or perhaps mouse ; more often in the trunk of a tree, or in a dead stump in a hedgerow ; occasionally in a hole in a wall.

Materials. Dry grass and moss, lined with wool, hair, and feathers ; loosely put together.

Eggs. 6—9 ; 0·58-0·7 × 0·45-0·5. White, spotted and speckled with light red-brown ; the spots usually form more or less of a zone round the larger part ; indistinguishable from the eggs of several other tits.

TIT, CRESTED : *Parus cristatus.*

A resident, but rare and extremely local ; it has occurred in England and Ireland, and is not very rare in certain pine-forests in Scotland, where it breeds sparingly.

Situation. Holes in trees ; sometimes in the forsaken nests of Crows, Magpies, or other birds.

Materials. Dry grass, moss, wool, feathers, and hares' or rabbits' fur, felted neatly together.

Eggs. 4—6 ; 0·6-0·7 × 0·47-0·55. White, spotted and speckled with reddish-brown of varying shades, generally in a zone round the larger part. End of April or early in May.

TIT, GREAT : *Parus major.*

A common resident, breeding freely in every county, especially in well-wooded districts ; less common in Scotland.

Situation. Holes in the trunks of decaying trees, or in walls ; the excavation, when in tree-trunks, is often made by the bird itself. Very curious sites are often chosen, as in flower-pots or disused pumps, beneath the nests of Crows, Rooks, and Magpies, &c., &c. Mr. Hawkins relates a singular instance of this bird building its nest in a drinking-cup.

Materials. Dry grass and moss, lined with feathers, hair, and wool.

Eggs. 6—12, but usually 7 or 8; 0·65-0·8 × 0·5-0·55. White, spotted with light red-brown; the size and intensity of the spots varies greatly; they often form a zone round the larger part, and are sometimes mere specks; often scarcely distinguishable from small eggs of the Nuthatch, but distinguishable by their size from those of other tits. May; two broods are reared—often, at least.

TIT, LONG-TAILED: *Acredula rosea.*

A common resident throughout the British Isles, except in the extreme north; less common in Ireland.

Situation. Tall hedges, trees, furze-bushes, &c.; very strongly attached to the sticks supporting it; generally within a few feet of the ground, but sometimes more.

Materials. Moss, cobwebs, and wool, very compactly interwoven and felted together, studded thickly with lichens outside, and thickly lined inside with hair and feathers, one of which is generally so arranged as to close the hole during the absence of the bird; oval, with a side entrance; very large for the size of the bird; undoubtedly the most beautiful and interesting nest constructed by any British bird; it has been said to have two holes—one to accommodate the long tail of the bird—but this is unquestionably an error.

Eggs. 6—10, occasionally 16 or 20; 0·52-0·63 × 0·48-0·4. White, slightly spotted and speckled with faint reddish-brown, and often a few indistinct purplish markings; less spotted than those of any other British Tit; not unfrequently unspotted altogether. March to June.

TIT, MARSH: *Parus palustris.*

Common in England, though local; scarcer in Scotland, and almost unknown in Ireland.

Situation. Holes in decaying trees, especially willows, placing the nest very deep; the bird often enlarges or wholly excavates its nesting-hole; sometimes in holes in banks; occasionally in a rat's hole in the ground.

Materials. Moss, the down of the ripe catkins of the willow, and the fur of rabbits, sheep's wool, &c.

Eggs. 6—8, occasionally more; 0·6-0·67 × 0·47-0·52. White, with red-brown specks and spots, generally more numerous at the larger end; indistinguishable from those of the Blue and Coal Tits. May and June; two broods are sometimes reared.

NOTE.—The eggs of the Coal, Marsh, and Blue Tits, the Wren and the Creeper, so closely resemble one another that there are no means of certainly identifying them, except by seeing or procuring the bird to which the nest belongs. The eggs of the Great Tit may usually be known by their larger size, but they, again, very nearly approach the eggs of the Nuthatch.

TWITE: *Linota flavirostris;* also MOUNTAIN LINNET.

A winter visitor to the eastern and southern parts of England, but resident from the midland counties northward to the Shetlands and in Ireland, breeding on elevated moorlands, though seldom seen in cultivated districts.

Situation. Among the tallest heath in mountainous districts; generally on or very near the ground; sometimes also among furze or other low bushes, or beneath a slip of turf turned up by the plough.

Materials. Twigs of heather and bents, lined with wool, root-fibres, feathers, hair or thistle-down, and the finer parts of the heath.

Eggs. 4—5, occasionally 6; 0·65-0·72 × 0·47-0·53. Pale bluish-green, speckled, spotted and streaked with reddish-brown and pale purplish-red; indistinguishable from those of the Linnet, but slightly more streaked. May or early June.

WAGTAIL, BLUE-HEADED: *Motacilla flava.*

A rare straggler to Britain, but has been known to breed in Northumberland, and may do so elsewhere.

Situation. On banks, hidden by a tuft of grass or other herbage, or in corn-fields.

Materials. Dry grass, moss, and rootlets, lined with hair, wool, and a few feathers.

Eggs. 5—6; 0·73-0·83 × 0·53-0·59. Yellowish-white, mottled, spotted, freckled, and clouded with pale brown; sometimes finely streaked with rich blackish-brown at the larger end; much like those of the Yellow Wagtail. May or early June; only one brood probably is reared.

WAGTAIL, GREY : *Motacilla melanope.*

A resident, but uncommon and local; it breeds in the northern and western counties.

Situation. Shelves of rocks, under stones in quarries, and on banks ; generally well concealed by grass or other herbage, and near a stream.

Materials. Moss, bents, and rootlets, lined with horsehair.

Eggs. 5—6; 0·65-0·79 × 0·54-0·59. Pale French-grey, mottled and clouded with pale brown and creamy-brown. End of April or early in May ; more than one brood is reared.

WAGTAIL, PIED : *Motacilla lugubris.*

A common resident, except in the extreme north, though to a certain extent migratory.

Situation. Holes in stone walls, heaps of stones by road-sides, quarries, roofs of buildings, pollard willows at the top of the trunk, beneath the eaves of haystacks, in rock-crevices, &c., &c. Some remarkable situations have been recorded, as under a switch of the Ayrshire Railway, at the Lochwinnoch Station, where a Pied Wagtail built her nest and sat on five eggs, although there was scarcely an hour in the day without trains passing over it within two or three inches of the nest.

Materials. Moss, fibrous roots, grasses, and often a few leaves, very neatly lined with wool, horsehair, and feathers.

Eggs. 4—5, sometimes 6; 0·75-0·86 × 0·56-0·63. Greyish-white, profusely speckled (and generally equally all over) with greyish-brown, and often with additional faint-grey undermarkings. They much resemble one variety of the eggs of the Common Sparrow ; indistinguishable from those of the White Wagtail. April onwards : two broods are often reared.

WAGTAIL, WHITE : *Motacilla alba.*

The Continental form of our Pied Wagtail. It is a straggler, rather than a regular visitor, to Britain, but breeds here occasionally, especially in the counties on the south coast ; probably overlooked elsewhere.

Situation, *Materials*, and *Eggs*. Similar in almost all respects to those of the Pied Wagtail, though the eggs are said as a rule to have a bluer tinge than those of that bird; it is necessary to see or procure the bird in order to identify the eggs with certainty.

WAGTAIL, YELLOW : *Motacilla raii.*

A regular summer visitor, though not abundant, and rather local; rare in Ireland, though it has been known to breed there.

Situation. On the ground, sheltered by a clod or tuft of herbage; usually on a bank or at the foot of a wall.

Materials. Dry grass, moss, bents, and rootlets, variously lined either with feathers, horsehair, or cow's hair.

Eggs. 5—6; 0·73-0·82 × 0·55-0·63. Greyish-white, very thickly speckled and mottled all over with pale ash-brown; a few fine streaks of a rich blackish-brown are usually present on the larger end; very similar to those of the Blue-headed Wagtail, and sometimes scarcely distinguishable from those of the Sedge Warbler. April onwards; more than one brood is reared.

WARBLER, GREAT REED : *Acrocephalus turdoides.*

An exceedingly rare visitant, which is supposed (though on very doubtful authority) to have formerly bred here.

Situation. In beds of reeds, supported by three or four of the reed-stems.

Materials. Dried leaves and flowering scapes of the reeds.

Eggs. 4—5, sometimes 6; 0·7-1·0 × 0·63-0·8. Very pale greenish-blue, handsomely blotched and speckled with ash-grey, reddish-brown, and very dark olive.

WARBLER, DARTFORD : *Melizophilus undatus.*

A resident, but local and uncommon, being confined chiefly to furze-covered commons on the south coast, though it has been known to breed as far north as Sheffield.

Situation. Thick furze-bushes, about two feet from the ground.

Materials. Col. Montagu, who was the first accurately to describe the nest, says, "The nest is composed of dry vegetable stalks, particularly goose-grass, mixed with the tender dead branches of furze, not sufficiently hardened to become prickly; these are put together in a very loose manner, and intermixed very sparingly with wool. In one of the nests was a single partridge's feather. The lining is equally sparing, for it consists only of a few dry stalks of some fine species of Carex, without a single leaf of the plant and only two or three of the panicles. This thin, flimsy structure, which the eye pervades in all parts, much resembles the nest of the Whitethroat."

Eggs. 4—6; 0·64-0·72 × 0·49-0·52. "The eggs possess a slight tinge of green; they are fully speckled all over with olivaceous-brown and cinerous on a greenish-white ground, the markings becoming more dense, and forming a zone at the larger end."[1]

WARBLER, GRASSHOPPER: *Locustella nævia.*

A regular, though local and uncommon, summer migrant. It is far more often heard than seen; rare in the north of Scotland.

Situation. In furze-bushes on commons, generally at the very bottom; also in clumps of grass in woods and on hedge-banks.

Materials. Moss, grass, lady's bedstraw; the lining, fine grass-bents.

Eggs. 5—7; 0·7-0·75 × 0·5-0·55. Pale pinky-white, profusely speckled and freckled all over (though generally most at the larger end) with reddish-brown; a few hairlike and almost black scratchings are usually observable; occasionally almost unspotted. Middle of May to early in June or July; two broods are often reared.

WARBLER, MARSH: *Acrocephalus palustris.*

A rare and local, though regular, summer visitant to the southern counties of England. It has until lately been largely confused with the Reed Warbler. It has been found breeding near Taunton, Bath, and elsewhere, and will probably be detected in other places.

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[1] Montagu's British Birds, containing a full account of the Plumage, Weight, Habits, Food, Migrations, Nest and Eggs of every Bird found in Great Britain and Ireland. Arranged under the English name in alphabetical order. Price 7s. 6d. Sonnenschein, Paternoster Square.

Situation. In low bushes, overgrown with reeds, nettles, or other herbage; near, but not over, water.

Materials. Leaves, fine grass, and moss, closely woven and felted together with spiders' webs and other downy substances, sparingly lined with horsehair; as deep as that of the Reed Warbler.

Eggs. 5—7; 0·65-0·8 × 0·52-0·59. There are said to be two equally common types: one greenish-blue, with spots and blotches of olive-brown, and underlying grey markings; the other, greenish-white, richly marbled, blotched, and spotted with olive-brown, much like the eggs of the Great Reed Warbler, but smaller. From the eggs of the Reed Warbler they may as a rule be distinguished by their much paler ground-colour and their larger, bolder, and fewer spots. In both types the markings are chiefly confluent at the larger end of the egg. June or July.

WARBLER, GARDEN: *Sylvia hortensis.*

A common summer migrant, breeding in most counties; rare in Ireland.

Situation. Among nettles and in bramble-bushes, or traveller's-joy when densely matted and near the ground; plantations, shrubberies, gardens, and similar secluded places; always near the ground.

Materials. Moss, dried stems of the goose-grass, fibrous roots, wool, cobwebs, and horsehair; a very slight, but neat, nest.

Eggs. 4—5; 0·7-0·85 × 0·55-0·63. Greenish-white, with patches of faint grey, blotches and marblings of olive-brown, and spots (sometimes streaks) of deep brown; very like one form of the eggs of the Blackcap, but seldom so boldly marked. May; only one brood is probably reared.

WARBLER, REED: *Acrocephalus streperus;* also REED WREN.

A not uncommon, though local, summer visitor to the south-eastern parts of England; very rare in Scotland and Ireland.

Situation. Usually in marshy situations suspended over the water, between the stems of reeds, to which it is curiously and beautifully fastened by the dried grasses and reeds, of which it is principally constructed; often in bushes near water; of great depth.

Materials. Dried leaves and grass, with some moss and wool, as well as the dried flowering scapes of the reed.

Eggs. 4—5; 0·7-0·78 × 0·5-0·55. Greenish-white, clouded, spotted, and freckled more or less thickly with dark olive, and occasionally ash-coloured, spots; sometimes a few small streaks or specks, almost black, are present; spots generally more or less confluent at the larger end. June.

WARBLER, SAVI'S: *Locustella luscinioïdes.*

A very rare summer visitor. It formerly bred not uncommonly in the (now drained) fenny districts of Norfolk and Cambridgeshire, but has not been known to nest in England for nearly thirty years.

Situation. On or near the ground in a thick tuft of sedge.

Materials. Wholly constructed of the dried long leaf-blades of the common reed, or other sedgy grass, the finer portions being used for lining; very strongly and compactly woven together, and deep.

Eggs. 4—6; 0·75-0·8 × 0·55-0·6. Whitish, densely covered with minute specks of greyish-brown and light ash-grey; there is often more or less of a zone round the larger part.

WARBLER, SEDGE: *Acrocephalus phragmitis.*

A very common summer visitor.

Situation. In, or at the foot of, low bushes, by the sides of ponds, streams, and ditches; sometimes in a tuft of grass; often in situations exactly similar to those selected by the Reed Bunting; *not* suspended among reeds, as stated by Selby and others; in fact, the Sedge Warbler seldom frequents reeds.

Materials. Moss, plant-stems, and coarse grass externally, lined with hair and fine dry grass, and often a little vegetable down; a simple, though not untidy, structure.

Eggs. 5—6; 0·6-0·75 × 0·5-0·55. The ground-colour (if any) is a pale yellowish-brown, but it is seldom or never visible, being entirely covered with a dense freckling, spotting, or mottling of yellowish-umber-brown; generally there are a few fine scratchy black lines on the larger end. Distinct. May to July; two broods probably are reared.

WARBLER, WOOD: *Phylloscopus sibilatrix;* also WOOD WREN.

A fairly-common summer migrant, though much more local than its near allies, the Chiffchaff and Willow Wren; rare in Ireland and the north of Scotland.

Situation. On the ground, among coarse tufts of grass, bilberry, or heath.

Materials. Hay, leaves, and moss, lined with very fine dry grass and horsehair; no feathers; its shape a depressed sphere, semi-domed.

Eggs. 5—7; 0·6-0·7 × 0·53-0·59. White, thickly spotted with purplish-brown, and with greyish undermarkings; the spots are generally uniformly distributed, but often confluent at the larger end; slightly larger than those of the Chiffchaff or Willow Wren; the spots much darker than those on the eggs of the latter, and much more numerous than those on the eggs of the former. Distinct. May or early in June.

WARBLER, WILLOW: *Phylloscopus trochilus;* also WILLOW WREN.

A common summer visitor.

Situation. On or very near the ground; generally on the bank bordering roads that have been worn through woods, among long grass upon a bank, or near the foot of a bush.

Materials. Moss and grass externally, often mixed with a few dead leaves or pieces of fern, lined with feathers, and often a little horsehair; its shape a depressed sphere, with a lateral opening, semi-domed.

Eggs. 5—7, occasionally 8; 0·56-0·73 × 0·45-0·5. Ground-colour white, thickly spotted or speckled, usually most at the larger end, with pale brownish-red; sometimes almost or quite unspotted; very like those of some of the Tits, but distinguishable by the colour and number of the markings from those of the Chiffchaff and Wood Warbler. May or early in June.

WATERHEN, *see* MOORHEN.

WHEATEAR: *Saxicola œnanthe.*

A common, though local, summer visitor, frequenting and breeding on open downs and other moorland districts throughout the British Isles, but especially in the more northerly parts.

Situation. In the chinks of stone walls, under stones or clods, on moors or mountain wilds, in old rabbit-burrows, &c.

Materials. Bents, moss, dried grass, wool, and hair; the wool left on brambles and thickets is always sought by these birds; the whole structure is very loosely and inartistically put together.

Eggs. 4—6, occasionally 8; 0·79-0·95 × 0·6-0·65. Pale greenish-blue, generally quite unspotted, but occasionally speckled on the larger end with minute and indistinct rusty dots. It is said that the nest can easily be found by watching the hen bird. Distinct. Early in May onwards; two or more broods are usually reared in a season.

WHIMBREL: *Numenius phæopus.*

A widely-distributed, though not abundant, species on our coasts during the periods of spring and autumn migration; occasionally also in winter; breeds in the Orkney and Shetland Islands, in some parts of Sutherlandshire, and perhaps in some other of the wildest parts of the Highlands or western isles of Scotland.

Situation. A slight depression in the ground, sheltered by a clump of heath or coarse grass, on secluded mountain moorlands; generally not far from the sea.

Materials. A few twigs of heather and blades of dry grass.

Eggs. 4; 2·2-2·5 × 1·6-1·75. Olive-green or pale brownish-buff, blotched and spotted with brown or reddish-brown, and with faint grey; dark scratchings are often present on the larger end of the egg; very like those of the Curlew and Richardson's Skua, but always smaller than those of the former, and, as a rule, slightly larger than those of the latter. End of May to end of June; one brood only is reared.

WHINCHAT: *Pratincola rubetra.*

A regular summer migrant, though rather local, and not especially common. It breeds in most of the counties of Great Britain, and more rarely in Ireland.

Situation. On or very near the ground on heaths, furze-covered commons, &c. The nest is concealed with such skill that one may search for hours without finding it, although certain it is within a short distance. The bird is said to make a kind of track or maze through the grass to its nest, and to enter this maze at a considerable distance from the nest.

Materials. A few straws, moss and grass of two kinds, the coarser on the exterior, the finest employed for the lining; horsehair and fine rootlets are also used at times.

Eggs. 4—6; 0·71-0·81 × 0·55-0·6. Delicate greenish-blue, like the Hedge Sparrow's, but less rounded at each end, and faintly speckled in a zone round the larger part with dull reddish-brown dots. End of May; only one brood probably is reared, as a rule.

WHITETHROAT: *Sylvia cinerea;* also GREATER WHITETHROAT and COMMON WHITETHROAT.

A common summer visitor almost everywhere throughout the British Islands.

Situation. Among nettles and in bramble-bushes, or in any low and very thick herbage growing in woods or on hedge-banks, seldom more than two or three feet from the ground.

Materials. Generally the dead stems of goose-grass and a little hair; the materials are very loosely attached, and the nest is a very slight, though neat, structure.

Eggs. 5—6; 0·65-0·8 × 0·5-0·6. The ground-colour is a buffish- or greenish-white, mottled, blotched, and speckled with brown, and with fainter underlying markings of greenish-grey; the markings, which are decidedly variable, often form a zone round the larger end; somewhat like those of the Lesser Whitethroat, but the ground-colour seldom so white, and the markings greener and less bold. May and June; two broods probably are often reared.

WHITETHROAT, GREATER, *see* WHITETHROAT.

WHITETHROAT, LESSER: *Sylvia curruca.*

A regular summer migrant, but decidedly less common and more local than the Whitethroat; especially scarce to the west and north; unknown in Ireland.

Situation. Among tangled brambles and in low, thick hedgerows; generally more or less hidden by nettles or other coarse herbage.

Materials. Grass-bents or stalks of other plants, bound together with spiders' webs, and lined with rootlets and a little horsehair; shallower than that of the Whitethroat; slight, but neatly built.

Eggs. 4—5; 0·6-0·78 × 0·5-0·55. Ground-colour, creamy-white, boldly spotted and blotched with dark and light brown and pale grey; somewhat variable, but easily distinguished as a rule; the markings often form a zone round the larger end. Distinct. June or July.

WIGEON: *Mareca penelope.*

A common winter visitor to the British Isles; chiefly found upon the coasts. A few pairs breed in the counties of Ross, Sutherland, and Cromarty, and in the Orkneys and Shetlands; in Ireland it probably breeds, but has not yet been proved to do so; in England it has not as yet been known to breed, except in a semi-domesticated state.

Situation. In a clump of rushes, or a tuft of heather; generally near the edge of a lake.

Materials. Dead grass, reeds, and sedge, lined with fine down plucked from the body of the parent bird.

The down in the nests of this species may be recognized by its sooty-brown colour and distinct white tips.

Eggs. 7—10, occasionally 12; 1·9-2·3 × 1·3-1·6. Creamy-white; oval in shape, and almost equally rounded at both ends. May.

WOODCOCK: *Scolopax rusticula.*

A common winter visitor to the whole of the British Isles; especially abundant in Ireland and the west of England. It has been known to nest, though sparingly, in almost every county, and may, therefore, be spoken of as a regular breeder here.

Situation. In underwood, generally at the foot of a tree; the bird generally scrapes out a slight hole in the ground, without much attempt at concealment.

Materials. Dead leaves and grass and dried fronds of the bracken.

Eggs. 4; 1·6-1·8 × 1·3-1·4. Yellowish-white or brownish-buff, blotched and spotted (chiefly near the larger end) with reddish-brown and pale greyish-brown. Distinct. March and April; probably no more than one brood is reared.

WOOD-LARK: *Alauda arborea.*

A not uncommon resident, though very local and nowhere abundant, breeding in the north and west of England and in Wales; less common and still more local in Scotland and Ireland.

Situation. On the ground, in a slight depression, under a tuft of grass or any low plant or bush.

Materials. Grasses and bents, the coarser ones outside, the finer used for lining; sometimes a little hair is found among the lining, and a few scraps of moss outside.

Eggs. 4—5; 0·78-0·9 × 0·6-0·7. White, slightly tinged with pale green or buff, and thickly speckled or finely spotted with reddish-brown; generally uniformly distributed, but sometimes zoned at the larger end; distinguishable from those of the Skylark by the spots being smaller and of a reddish- instead of an olive-brown, and by the ground-colour being usually less obscured. Distinct. March and April; two broods are often reared.

WOODPECKER, GREEN : *Gecinus viridis.*

A somewhat local, but fairly common, resident in most well-wooded districts of England south of Northumberland; a very rare accidental visitor to Scotland and and Ireland.

Situation. In the trunk of a large tree, particularly the aspen, ash, and poplar, or some other soft-wood tree, in a hole which is generally made by the bird itself, and is usually very round and from eight· inches to a foot in depth; the nesting-holes bored by this bird are frequently taken possession of by the Starling.
Materials. None, except the particles of wood chipped off by the birds in the process of boring.
Eggs. 5—7, occasionally 8; 1·19-1·4 × 0·89-0·95. White, unspotted; beautifully glossy. End of April or early in May.

WOODPECKER, GREATER SPOTTED : *Dendrocopus major.*

A not uncommon resident in thickly-wooded districts, though by no means abundant; it breeds probably in well-wooded districts in every county in England, Wales, and the south of Scotland, but much more rarely in the north of Scotland and in Ireland.

Situation. In a decaying part of the trunk, or occasionally in one of the larger branches, of a tree; a natural hole is said sometimes to be made use of, but more often the hole is very cleverly excavated by the bird itself; it is beautifully rounded, and often a foot or eighteen inches in depth.
Materials. None, except the particles of wood chipped off by the bird.
Eggs. 4—6, occasionally 8; 0·95-1·15 × 0·75-0·82. White, unspotted. Distinct. End of May; one brood only is usually reared.

WOODPECKER, LESSER SPOTTED: *Dendrocopus minor.*

A resident in England south of Yorkshire; more common in many districts than the Greater Spotted Woodpecker, but, like it, nowhere abundant. In Scotland it is very scarce, and in Ireland still more so; it has seldom, if ever, bred in the latter country.

Situation. A hole in the trunk of a tree, so small at the entrance that a larger bird cannot enter; pear, apple, or plum-trees in orchards, old pollard willows beside a brook, or the main branches of large forest trees, oftenest afford nesting-sites for this bird; the hole is usually from eight inches to a foot in depth.

Materials. None, except small fragments of decayed wood.

Eggs. 5—6, occasionally 9; 0·7-0·82 × 0·55-0·62. White, unspotted, and glossy; very like those of the Wryneck, but slightly smaller and less glossy, as a rule. Early in May.

WREN: *Troglodytes parvulus.*

An abundant resident; breeds everywhere.

Situation. Under the thatch of stables, out-houses, summer-houses; on the face or in crevices of rocks, either exposed or clothed with ivy; on the ivy-clothed trunks of trees; among masses of honeysuckle; on cliffs and banks, especially if ivy-covered; frequently on the sides or under the eaves of haystacks. Very strange nesting-sites are sometimes chosen, as among the leaves of a Savoy cabbage. The nest is completely domed, and has a small side entrance-hole near the top. This little bird has credit for building a number of supplementary nests, for no purpose except to roost in, and it is certain a great many more nests are built than are required for purposes of incubation; such supplementary nests are always without lining, and are commonly called "cocks' nests;" Mr. Duncan asserts that they are built by the male birds.

Materials. Principally moss, lichens, and dead leaves, generally lined with feathers, fine moss, and hair; always of the same colour as the substance to which it is attached; thus, when built in a haystack, hay is always used; a well-built structure, and of enormous size for so small a bird.

Eggs. 4—6, occasionally more; 0·65-0·75 × 0·48-0·55. White, tinged with yellow, and sparingly spotted or speckled at the larger end with faint red-brown; often unspotted; very little interference is sufficient to cause the nest to be deserted. April onwards.

WREN, REED, *see* Warbler, Reed.

WREN, WILLOW, *see* Warbler, Willow.

WREN, WOOD, *see* Warbler, Wood.

WRYNECK : *Iÿnx torquilla.*

A fairly-common summer visitor to the south-eastern portions of England; much rarer and more local to the north and west; scarce in Scotland, and only once met with in Ireland.

Situation. Natural holes in the trunks of decaying trees; never bored by the bird itself.

Materials. Comminuted decayed wood.

Eggs. 6—8, occasionally 10; 0·8-0·9 × 0·58-0·67. Pure white; very like those of the Lesser Spotted Woodpecker, but, as a rule, slightly larger and less glossy. End of May; one brood only is reared.

YELLOW-HAMMER : *Emberiza citrinella.*

One of our commonest and handsomest birds; resident almost everywhere.

Situation. On or near the ground, commonly on a hedge-bank and under shelter of overhanging grasses; very often in a low hedge or isolated bush; occasionally, but not often, in gardens. The author has on three occasions found the nest of this bird in cart-ruts seldom used, and in two of these instances the parent had perished by the passage of a waggon laden with hay.

Materials. The decayed or dried leaves of grass, with a little moss, form the exterior of the nest, then follows a layer of fine grasses, and the whole is lined with rootlets and a good deal of horsehair.

Eggs. 4—5; 0·8-0·95 × 0·6-0·69. Dingy-white, generally with a vinous tinge, finely streaked and scribbled over more or less thickly with dark purplish-brown (almost black), and with purplish-grey undermarkings; the lines are very irregular, and often terminate in a spot of the same colour. Typical specimens can hardly be confused with the eggs of any other British bird, except the Çirl Bunting. Distinct. April to July, and often August; more than one brood is reared.

EGG-COLLECTING.

Introductory Remarks. The collecting of the eggs of birds for scientific purposes (and their collection for any other purpose should be strongly discouraged) requires more skill and discrimination than the collection of specimens in almost any other branch of Natural History. One must not only be able to discover nests containing eggs, but competent also to identify with absolute certainty the bird which laid them—often a matter of no slight difficulty, yet one which, if neglected, renders a collection entirely valueless. Moreover, to identify the various species of birds, and to discover their nests, one requires a more or less intimate acquaintance with the habits of birds, though this knowledge it is not the object of the present work to impart. The best works on British birds for the guidance of the student are noticed hereafter.

But the mere difficulty of properly collecting specimens goes but a short way towards recommending the study of oölogy : something much stronger is needed to recommend it. The mere collecting of specimens in any branch of Natural History is seldom, if ever, of any value in itself. Collection should always be carried on simply as a means towards an end—that end being the study of the life-history, habits, and peculiarities of the objects collected ; and this should more especially be realized when, as in the present case, the collecting must be carried on more or less at the expense of living creatures. The days are now long since past when an ignorant world, taking its stand upon what it was pleased to call "utilitarian principles," looked with scorn upon the study of Natural Science, as something altogether useless and beneath notice. It is no longer necessary to apologize for introducing any branch of Natural History, certainly not oölogy, as it is an indispensable adjunct to the work of the ornithologist, and a line of study which particularly recommends itself from the pleasant and healthy surroundings amid which it has usually to be followed.

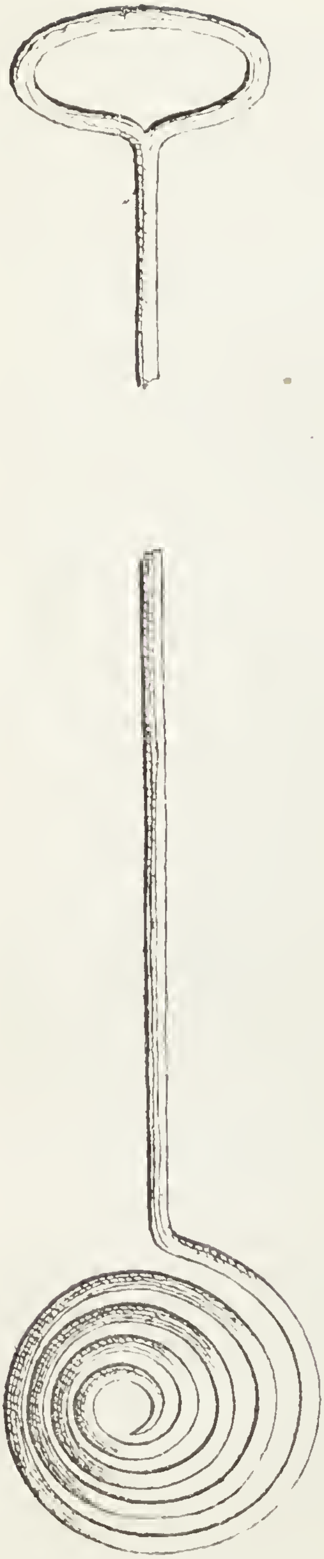
The following Hints on Egg-Collecting are largely based (as are most other treatises upon the same subject) upon Professor Alfred Newton's "Suggestions for Forming Collections of Birds' Eggs," first issued as a circular by the Smithsonian Institution of Washington, afterwards reprinted in the *Zoologist* (p. 7189), and finally issued in pamphlet form.

Every oölogist, without one single exception, should keep a detailed journal or diary, in which all particulars of his finds should be carefully and fully entered at the time. No one can accomplish any useful scientific work without this necessary accompaniment. The journal is to a naturalist what the ledger is to a business man. Without it, the so-called "naturalist" is merely a collector, instead of a student.

The time of year at which the nests of different species should be sought differs, of course, more or less according to the season and the locality ; but it may be safely stated that, as a rule, nine-tenths of the year's collecting has to be done between the beginning of April and the middle of June. It is true that nests of some resident birds, such as thrushes, blackbirds, hedge-sparrows, and rooks, may very often be found in March, and not unfrequently in February, while late second or third broods are often to be met with as late as the middle and even the end of July ; still the bulk of the year's collecting has to be done between the dates named. As the usual date of egg-laying has been given under most species, it is not necessary to say very much upon the subject here. Among the species for which the collector should make search earliest in the season, are the thrushes, which (as already stated) may be found from March and even February onwards. As a rule, the very earliest nests will be found in yews, laurels, and other evergreen shrubs growing in gardens, shrubberies, and plantations immediately adjoining houses, as these are almost the only sites affording shelter at that time of year. Next to these, in the early part of April, the nests of herons, crows, magpies, rooks, owls, and other large birds building in tall trees in woods or copses, may be looked for. A little later in the same month is the best time to search for the nests of snipe, redshanks, coots, moorhens, pewits, golden plover, and nearly all wading- and water-birds. At this period, therefore, it is well to resort to marshes, boggy upland moors, and sea-side swamps. Before the end of April, the great bulk of the small inland resident birds, such as the finches, tits, and sparrows, have begun to nest, and the collector should then largely direct his attention to hedgerows and small trees. Somewhat later still, and indeed throughout the whole of May, most of the small summer migrants, the warblers, swallows, cuckoos, shrikes, flycatchers, and the like, are to be found breeding; and attention should, accordingly, be paid to hedge-banks, ditch-sides, small bushes, furze-commons, and places where vegetation is low and tangled. After the middle of June it is hard to name any species for which the young collector should make especial search, although, in more or less thickly-inhabited districts, where many earlier broods get taken or otherwise destroyed, it is surprising what a number of eggs may still occasionally be found. Among these may be mentioned common whitethroats, sedge warblers, yellowhammers, robins, and the like. The common sparrow, too, is a late breeder, often nesting right on to the beginning of August. Of all British birds, the ring dove and the stock dove are, perhaps, the most irregular breeders, often nesting right on into the beginning of winter.

The requisites for a collector when actually engaged in field-work, next require attention. As some of these are of an entirely personal character, and have not been given naturally to all individuals alike, it is impossible to give much practical advice as to how they may be obtained. Among requisites of this kind, which are all but indispensable to the successful collector, are an active and healthy body, a sharp eye, a quick ear, a good share of pluck, and above all inexhaustible patience and perseverance. All of these qualities, though to a certain extent indispensable from the outset to the young collector, are as much acquired by, as necessary to, the study of oölogy. Among other requisites which are more easily obtainable "to order"—as a tradesman would say—are a good collecting-box, a supply of cotton-wool, a little whitey-brown paper, a wire egg-scoop, a pair of climbing-irons, field-glasses, and a copy of 'Birdsnesting.' These are all more or less indispensable, though none of them absolutely so, except perhaps the first. A rope, a brown canvas satchel or a fisherman's basket, a hooked walking-stick, and a small piece of looking-glass, will also very often prove useful.

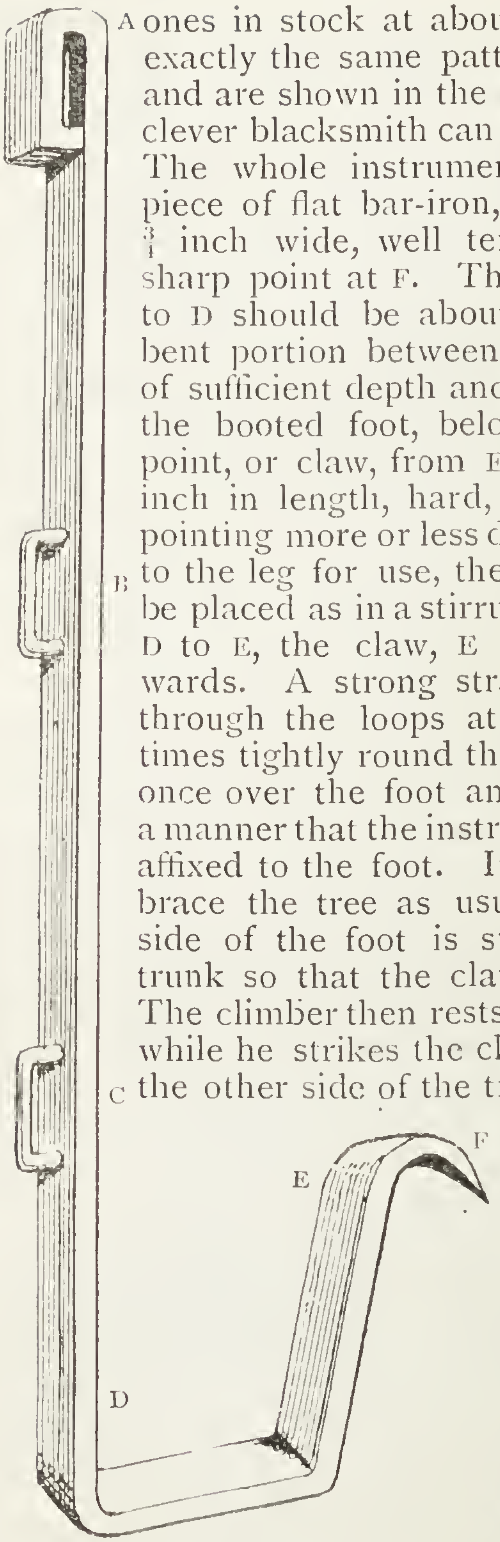
As regards the collecting-box, almost anything may be employed, from a pill-box to a botanical vasculum. An ordinary tin canister will often be found very useful. This can be carried with the climbing-irons, if these be taken, in the satchel. A tin box of some kind will be found the most suitable, on account of its combined strength and lightness. Collapsible tin boxes, which are obtainable from almost any professional naturalist, are very good for the purpose. The smaller boxes may be packed inside the larger ones when setting out upon an expedition, so that they occupy less space. A good supply of cotton-wool should be taken, and the eggs should be packed rather tightly in it. In the absence



EGG-SCOOP.

of cotton-wool, the collector in the field may make use of sheep's wool, the down of the bulrush, moss, or any other soft vegetable substance, but cotton-wool is unquestionably by far the best thing for the purpose. The eggs should be wrapped also in the paper, as hereafter explained. As regards the egg-scoop—a very necessary instrument for obtaining possession of eggs which lie at the bottoms of deep holes in trees or crevices in rocks—many contrivances may be made use of. Some collectors carry a common pewter spoon, which answers well enough in many cases, but nothing is cheaper, better, or more easily carried than a home-made wire scoop. One has but to take a piece of soft iron wire, a foot or so in length, and bend it into a loop at one end for a handle, and into a flat watch-spring-like coil at the other. This coil may easily be made cup-shaped with the fingers. If the bowl thus made is not large enough to hold any particular egg with safety, an extra turn or two of the wire round its margin can easily be made upon the spot. The shaft may of course be of any length, so long only as the wire of which it is formed is stiff enough to support the weight of the egg as it is being withdrawn from the hole. When not in use, the whole thing may easily be bent up into such small compass that it will go easily into the waistcoat pocket. On an emergency, a very useful scoop may be formed with a knife out of a twig of elder, or out of a large stem of the plant known as sheep's parsley.

The climbing-irons are in some cases almost indispensable. There is a common prejudice against them, because they are supposed to be dangerous, but this is rather on account of the faulty construction of those generally used in this country than anything else. In New York and all other large American cities, men are hourly to be seen in the streets ascending and descending the bare telegraph- and telephone-poles with the greatest ease and expedition by means of climbing-irons, which differ in no respect from those commonly used in this country, except that they have longer and sharper spikes. Climbing-irons are not commonly kept in stock by professional naturalists in this country, though they may occasionally be found on sale, when from 7s. 6d. to 10s. is the price usually asked. Messrs. Cooke & Son, of 30, Museum Street, W.C., have, however, some excellent ones in stock at about 5s. They are made on exactly the same pattern as those I myself use, and are shown in the accompanying sketch. A clever blacksmith can usually make a rough pair. The whole instrument should be made of a piece of flat bar-iron, about $\frac{3}{16}$ inch thick and $\frac{3}{4}$ inch wide, well tempered into a hard and sharp point at F. The straight portion from A to D should be about one foot in length; the bent portion between D and E should be made of sufficient depth and width to fit firmly around the booted foot, below the instep; while the point, or claw, from E to F should be about an inch in length, hard, well-tempered, sharp, and pointing more or less downwards. To affix them to the leg for use, the instep of the foot should be placed as in a stirrup in the bent portion from D to E, the claw, E F, of course pointing inwards. A strong strap should next be passed through the loops at A, B, and C, and several times tightly round the calf of the leg, as well as once over the foot and under the claw in such a manner that the instrument is tightly and firmly affixed to the foot. In climbing, the arms embrace the tree as usual, and the spiked inner side of the foot is struck smartly against the trunk so that the claw may gain a firm hold. The climber then rests on the hold thus obtained while he strikes the claw on his other foot into the other side of the trunk higher up, and so on alternately. If made on this model, with good, long, sharp spikes, there is not much danger of an accident through the hold of the spikes giving way, though the climber should beware of the trunks of dry, dead, hardwood trees, without bark, and of limbless trees that one cannot reach round.



CLIMBING-IRON.

The hooked walking stick will be found useful for tapping bushes and stumps as one passes, and for moving aside tall grass, wheat, or other growing herbage, to search for the nests of those ground-building birds; while the hook will be found of great service in gently pulling down the branches of a bush or small tree containing a nest, built just out of reach from the ground. When this cannot be done, one can often, by going very gently and carefully to work, feel with the hooked stick whether or not there are eggs in some nest just out of reach above one's head. A better plan, however, is to use the piece of looking-glass for this purpose. With a piece of wire or string, it is easily fastened to the hook of the stick, and when held over the nest the observer below can easily make out the contents. The looking-glass, too, will often be found useful for the purpose of ascertaining whether there are eggs in a nest in some deep hole in a tree or rock. A small penny toy looking-glass is very useful for this purpose. The hook of the stick, too, when strong enough, has sometimes proved of service in enabling me to reach the lower branches of a difficult tree, which could not otherwise be reached from the ground, and thus to draw myself up.

The field glasses, though by no means so absolutely necessary to the oölogist as they are to the ornithologist, are nevertheless often very useful. As a general rule, their chief use will be to help in the identification of some bird whose nest has been discovered; but I have also sometimes found them of service on discovering a nest of some water-bird, built a considerable distance out on the surface of a pond or lake, or of some small bird, built at the end of a long projecting horizontal branch. In the former case, one can often tell with the glasses from the bank, or from among the branches of some neighbouring tree, whether or not the nest in question contains eggs, and accordingly, if it is worth the trouble of wading or swimming or climbing after: in the latter case, one can sometimes see whether the nest contains eggs or not by ascending to a higher branch and looking down, when without the glasses one could make out nothing for certain.

A good stout rope is, of course, almost indispensable for cliff-climbing, but it will sometimes prove useful to the collector, even in the woods. Thus I have sometimes ascended difficult trees by tying a loop at one end of my rope, and throwing it over a strong branch. If the feet be then placed in the loop, and the other end of the rope be held in the hands (the arms being placed round the looped half of the rope) it is easy, by raising the feet and pulling simultaneously with the hands, to rise gradually and with the greatest facility, to the branch over which the rope has been thrown. A rope ladder would, of course, make the ascent much easier, when once it was fixed in position ; but this has the disadvantage of being heavier to carry, and of requiring to be attached to the branch in some manner before ascent, and of being detached afterwards, whereas after the ascent and descent have been accomplished with a rope, it can be simply pulled back over the branch, when it falls to the ground. Another mode of ascending the limbless trunks of tall trees, is to take a piece of rope six or seven feet in length and tie it loosely round both the trunk of the tree and one's body. In climbing, the rope has then to be pushed up all round the tree, and when rest is required, one can, by pushing the rope up as far as possible on the further side of the tree, sit comfortably upon it. A rope, too, will often be found of great assistance in reaching nests built at the end of long horizontal branches that are too slender to bear the weight of either man or boy. These, when small, can, of course, often be cut or sawn off and drawn in ; but in the case of somewhat larger branches, it is well to tie one end of the rope to the main trunk of the tree or to some larger branch some distance overhead, and then venture cautiously out along the slender branch bearing the nest, relieving it as far as possible of your weight by pulling on the rope. Then, even though the branch should break, you run no risk of a serious fall.

So many sea-birds, hawks, crows, and other birds, build on ledges or in holes on the faces of tall precipitous cliffs, that some observations upon the best means of reaching their nests seem desirable here. Such cliffs may sometimes be scaled by expert climbers, either from base or summit, though the process is risky in the extreme to any but steady and experienced persons ; but they very often overhang their base, and are, in consequence, totally inaccessible from below. In the latter case there is no course open but to be lowered by means of a rope over the face of the cliff. For this operation, at least two persons are necessary. The person lowered should take his seat in a loop formed in the end of the rope, or upon a stick tied across it, and he should be actually lashed to his seat in such a manner that he cannot fall off in the event of his becoming insensible through an attack of sudden dizziness, or of his being stunned by the falling of stones from above when dislodged by the rope—both of which accidents are at all times liable to happen. Of course the main precaution to be taken when climbing cliffs is to see that the rope be strong enough to bear the weight of the person lowered. It is as well for the young collector not to attempt the descent of any cliff without the aid of some professional cliff-climber, accustomed to frequently make the descent for the purpose of collecting eggs. Such persons are usually to be found living in the vicinity of the chief bird-cliffs, such as those at Flamborough, St. Kilda, &c., &c. Some kind of pulley or wheel for the rope to pass over, in order to prevent its being chafed and cut by sharp stones and rocks, is very necessary.

Where and how to search for nests are points of great practical importance to the young collector, duly equipped with the necessary outfit, and able to be abroad at the proper time of the year. The situations in which birds build their nests are so various that it is all but impossible to give any general instructions as to where to search. The collector must refer in each case to the account of the usual nesting-site given under each species. There is only one single piece of advice to give, which will be found to answer under all circumstances—namely, to search long and perseveringly. This is the great secret of success.

As a general rule, it will be a mistake to look too much in wild regions and out-of-the-way spots. There are, of course, certain species which habitually breed in the remotest and most desolate places. Among these are the larger waders, the rock-building birds, the grouse and other moorland species, the ducks, and those birds which nest in swamps. But still, as has been said, the greatest number of birds (though perhaps not the rarest) are generally to be found immediately around the haunts of man. Gardens, shrubberies, hedges, and trees in orchards, copses, or pastures lying near the homestead —these are the kinds of localities in which most of our familiar birds will be found breeding, rather than in the depths of extensive woods, or out-of-the-way hedges among fields or commons, far away from houses. It is in such localities as these that food and materials for the nest are usually most easily obtainable, and there accordingly the birds build their nests. It is extraordinary what a number of different birds may be found breeding in large old gardens in, and on the immediate outskirts of, great towns and cities.

It is almost impossible to find the nests of some species of birds, except by accident, without careful and patient watching. Some small bird may have been seen repeatedly round a certain spot, with materials for its nest, or food for its sitting-mate, in its mouth ; but, although the collector may be sure of the position of the nest to a few yards, hours of diligent searching will often fail to reveal its exact position. In such cases, there is little or nothing for it, except to conceal one's self within sight of the supposed nest, and to watch carefully until the parent birds betray the precise situation of their treasure, by either visiting or leaving it.

Of the sand-pipers and plovers, the merlin, and many other species breeding on the ground on open heaths and moors, it is almost impossible to find the nests, except by watching the visits of the parent birds to their eggs. To do this satisfactorily, a telescope or a good pair of field-glasses are necessary. Should this plan fail, it is best, after giving the bird time to settle down, to jump up suddenly, and shout loudly or fire off a gun, when the sitting bird will often fly up straight from her eggs, thus betraying their whereabouts, instead of running quickly some distance from them as usual before rising.

One writer recommends the following as a good plan for finding the nests of small ground-building birds, such as larks, buntings, and pipits, which conceal their nests among standing grass, clover, or tall-growing grain-crops. These birds, even when flushed by a person walking through the fields, cannot always be traced to their nests, as they often run some distance unseen before rising; but, if two persons hold the ends of a long light rope and walk abreast of one another from one end of a field or meadow to the other, dragging the rope more or less tightly stretched between them, and keeping the eye steadily directed along its line, small birds, whose nests are concealed in the grass, will be disturbed and fly up directly the rope passes over them. If the rope be then at once dropped, either one or both of those dragging it, may, by following its guidance, arrive at least at the near proximity of the nest. The young ornithologist will soon discover that, when searching a hedgerow, it is a great advantage to do so from the side opposite to that upon which the sun is shining, as nests are then most easily detected. On the same principle, if there is a ditch below thick bushes, get into it and look upwards. It will be found an excellent plan, when searching the bushes growing on the banks of any small overgrown country brook, to put on a pair of large water-tight boots and to wade either up or down the stream, searching the bushes overhead. The nests of many small warblers, finches, buntings, and other birds building in such situations, may by this means be easily detected. In searching hedgerows and the like, a quick ear will often prove to be of as much use as a sharp eye. By advancing quietly, tapping the bushes gently with a stick as one goes, the peculiar and almost unmistakable rustle of a bird leaving her nest and escaping through the leaves and twigs may often be detected, even if the bird itself be not seen. Many a nest that would otherwise be overlooked, may thus be discovered.

The services of boys employed on farms, and of game-keepers and other residents in rural districts, will often be found of the greatest value to a collector, if small rewards be offered for all nests discovered. It should, however, be most rigidly insisted upon that the nests should be shown when actually *in situ*, and not taken and brought to the collector. This regulation may be difficult and tiresome to carry out; but experience will quickly show the great importance of rigidly adhering to it, if one's collection is to be worth anything at all for scientific purposes. Uneducated natives, even when perfectly honest (which all are not), should never be trusted to correctly indentify any eggs, or most annoying errors and complications will constantly arise. Much more might be written as to the best ways in which the nests of birds may be found ; but, as Professor Newton says, "The experience of a single season is, to most men, worth a whole volume that might be written on the subject."

Identification is the next point requiring attention, and is a matter of prime importance. No less an authority than Professor Newton has declared that "in all places and at all times, an egg-collector should recollect that identification and authentication are his main objects, to attain which no trouble should be too laborious, no care too great." An absolutely correct and reliable identification is of far more importance in oölogy than it is in any other branch of Natural History. The collector of birds, plants, insects, or fossils, so long as he notes carefully at the time, the locality and date of his specimens, need trouble himself little or nothing as to their identification. He has the specimens, and they can be as easily identified at any future time as when collected. But with eggs the case is entirely different. They must be correctly identified—that is to say, they must be assigned with certainty to the species of bird which laid them—on the spot, and at the time of their discovery, or this can never afterwards be done satisfactorily. The collector should always recollect that an unreliably or wrongly-identified clutch of eggs in his cabinet is worse than useless. With many common English birds, there can never be any reasonable doubt as to the species ; but, in cases where there is any possible room for doubt, the parent bird should be at least seen, and if this is not sufficient, procured. With the tits and some of the smaller warblers, this is especially necessary. In the case of valuable and little-known eggs, the bird should always be procured, and either skinned or preserved in alcohol. This can be done either by trapping, shooting, or snaring, and it should of course be done before the nest or eggs have been even so much as touched. It is never quite safe to conclude that a certain nest belongs to a bird seen round or near it, as some birds are egg-robbers ; others build in close proximity to the nests of different species ; while a few not unfrequently lay some or all of their eggs in the nests of other birds. Professor Newton even declares that some species will intentionally betray the nests of other species, built in close proximity to their own. In every case, then, no pains should be considered too great to positively identify each "clutch" at the time of their discovery.

The number of specimens desirable varies according to circumstances. Each "clutch" should always be taken and preserved intact, and separately from all other clutches. A clutch sometimes has a peculiarity or individuality of its own, which is not detected when eggs are mixed promiscuously. For instance, Mr. Seebohm has observed that, in complete clutches of the eggs of the tree sparrow, one specimen is, very curiously, lighter in colour, as a rule, than the rest. It is, therefore, now the custom of all the best collectors to preserve eggs in clutches where possible. In small private collections, a single clutch is usually enough to answer all practical purposes, except in the case of variable species; and the young collector should avoid the needless destruction of eggs by not taking more, unless he desires them for purposes of exchange; but, in large and important collections, intended for display in museums and other public institutions, too many clutches can hardly be preserved, in order to show every possible variation to which the eggs are subject.

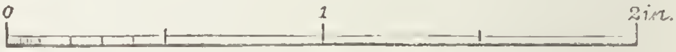
The care of eggs in the field is a matter of no slight importance. Some collectors blow their specimens at once upon the spot; and there can be no question whatever that they travel much more safely when this is done; but it is always difficult, and often impossible, to do this properly. In most cases, therefore, it will be necessary to pack the unblown eggs and carry them home to be blown. The best way of doing this is to wrap each egg separately, first in cotton wool, and then in a piece of fairly soft paper. Except with the very smallest eggs, newspaper will answer very well for this purpose when no better is ready to hand. Having wrapped the eggs carefully, pack them as carefully in your collecting-box, with plenty of cotton between each; put the box in your basket or satchel; and take care not to forget that it is there, or at the end of the day you may find the whole of your labour wasted. Pack the eggs tightly, rather than loosely, in the box, remembering that more eggs, both blown and unblown, are broken by being packed too loosely than by being packed too tightly. It is easy to tell whether or not eggs are "hard-set" by placing them in water, when, if fresh, they will sink, but, if much sat-upon, they will float upon or near the surface.

The collection of nests, as well as the eggs they contain, is a branch of ornithology which has hitherto been strangely neglected by naturalists. The reason for this doubtless is that the nests of birds are, as a rule, by no means easy to preserve in a good and presentable condition. Yet this can be done with the expenditure of a little care, and it certainly *should* be done; for the nests are, in all respects, of as much value, from a scientific point of view, as the eggs. As one writer has observed: "The nest is always more or less the result of conscious planning and intelligent work, even though it follows an hereditary habit in its style; while the egg is an automatic production, varying, if at all, only as the whole organization of the bird undergoes change. . . . Moreover, there is much that is highly interesting which remains to be learned about nests, and which can only become known by paying close attention to these most artistic masterpieces of animal art." Nests, then, should on no account be neglected. Some, unfortunately, from their very nature, are impossible of preservation, but any of those built among the branches of trees or bushes may usually be preserved with ease. They should never be torn from the twigs to which they are attached, but these should be cut and removed with the nest. Nests of ground-building birds, too, are very easy of preservation; but, as the materials of which these are constructed are usually much less coherent and less interwoven than those of which the nests of other birds are constructed, they need a certain amount of careful tying or stitching together, which may usually be done most easily with a needle and thread. "Before packing nests" (writes our collector) "it is always well to be quite sure that they are free from insects or decaying matter. Various methods of fumigation can be employed to avoid unpleasant odours, the increase of vermin, or other harm. One way is to enclose the nest in vapour of carbolic acid or other disinfectant, by placing it in a box perforated with a few pin-holes, accompanied by a small sponge well saturated with the liquid. Instead of carbolic acid, hyposulphite of soda, a colourless and inoffensive solution, might be used. Chlorine-water may also be recommended. Dry disinfection may be secured by blowing the nest full of Persian insect-powder by the help of a bellows. After remaining a few hours, the powder can be blown out in the same way. It would be possible to use powdered chloride of lime for the same purpose, but this is less desirable, one objection being that this powder (and equally the chlorine water spoken of above) might bleach the colour out of some components of the nest."

By far the best way of preserving nests is to store them in cardboard boxes. If these are constructed with glass tops, they will serve their purpose much better, but few young collectors probably will care to go to the extra expense which this entails. The boxes should, however, be made in sizes which are multiples of one another, so that either two or four little ones will fit exactly into a large one. By this means much space will be saved; and, in the case of the smaller nests, when three or four of one species have been collected, the little boxes which they occupy can be packed inside a larger one, and thus the whole series can be conveniently kept together. In most cases, it will be necessary to have special boxes made for this purpose. It will be found a great advantage if they are so constructed that one side of each box may be let down when the lid is off, it being attached only at the bottom by a cloth hinge. By this means, the outside of the nest may be examined, as well as the cup-shaped inner surface, without removing it from its box, and consequently without any handling, which always tends to the destruction of a nest. The eggs, when blown, may of course be displayed in their rightful position in the nest; but in this situation, they are very liable to be broken in the event of the nests being moved, and with valuable specimens at least, it is best to display them separately.

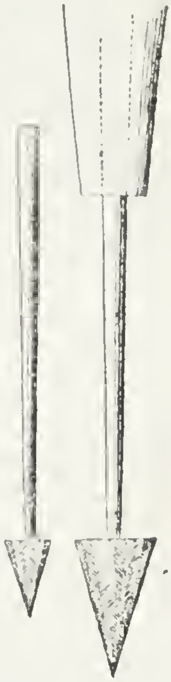
The weights of the eggs of birds is another subject which has hitherto been almost wholly neglected by ornithologists in this country. Occasionally some reference to the average weight of the eggs of some particular species is found in the better works on ornithology; but, as a rule, no reference is made to the matter, though the average measurements are usually given with great precision. The reason for this is at once obvious: The dimensions of an egg are at all times easily ascertained, while the weight can only be found by the expenditure of a little time and trouble before the egg is blown. It is this small expenditure of time and trouble which ornithologists have hitherto grudged, although the weight of an egg is of just as much scientific interest as its dimensions—indeed, of the two, the former point is, in reality, of the greater value. At present, however, no systematic series of observations on the weights of the eggs of British birds is in existence. Yet the means of helping to form such a series is easily within the reach even of schoolboys, and it is a subject which may be especially commended to their attention. A careful statement of the exact weight of all the eggs taken in a season by any schoolboy would be of considerable scientific value; but any one contemplating the compilation of such a statement must very clearly understand that, unless his figures are absolutely correct and reliable, they will be worse than useless. All the weights should be ascertained very exactly by means of a chemical balance. Any respectable chemist would be willing, for a small consideration, to weigh a collector's specimens for him, if he does not care himself to invest in a rather expensive pair of scales.

In measuring eggs a pair of small callipers may be used, but it is better to buy or make an instrument something like a shoemaker's measure, with a graduated bar and a sliding upright portion.



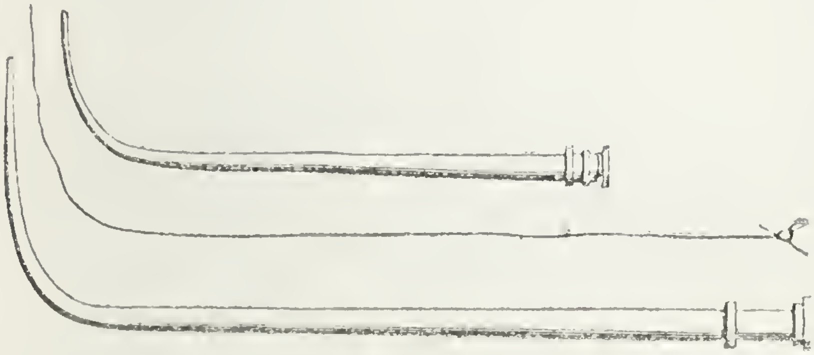
DECIMAL SCALE FOR EGG-MEASURING.

The preparation of specimens is the next matter requiring attention. First, the implements necessary must be noticed. These are very simple, consisting chiefly of a bowl of water, an egg-drill, a blow-pipe with a fine orifice, a pair of fine-pointed tweezers, a solution of corrosive sublimate or bichloride of mercury, a syringe, and some blotting paper. The bowl of water is useful when the egg is being drilled. The egg should be held over the water, so that, if dropped by accident, it receives no injury. The interior of the shell, too, has to be well rinsed out with water by means of the syringe. Eggs that are addled, hard-sat, or very stale, should be drilled under water, or they are liable to burst. The egg-drill may either be purchased of a professional naturalist, or be made at home. Drills made in the following manner are supplied by most dealers for 2d. or 3d. each. Take a piece of thick steel wire two inches in length, soften it in the fire, and file down to a neat, sharp point, having five or six flat sides, not round. Then temper it again, and you have a drill which will do excellently for any of the smaller eggs. Drills for the larger eggs are sold by some naturalists at about 1s. each. Messrs. Watkins and Doncaster, and Messrs. Cooke and Son, have them up to the largest size shown above. Messrs. Cooke and Son also keep very good ones. These conical-headed drills serve equally well for both small and large eggs.



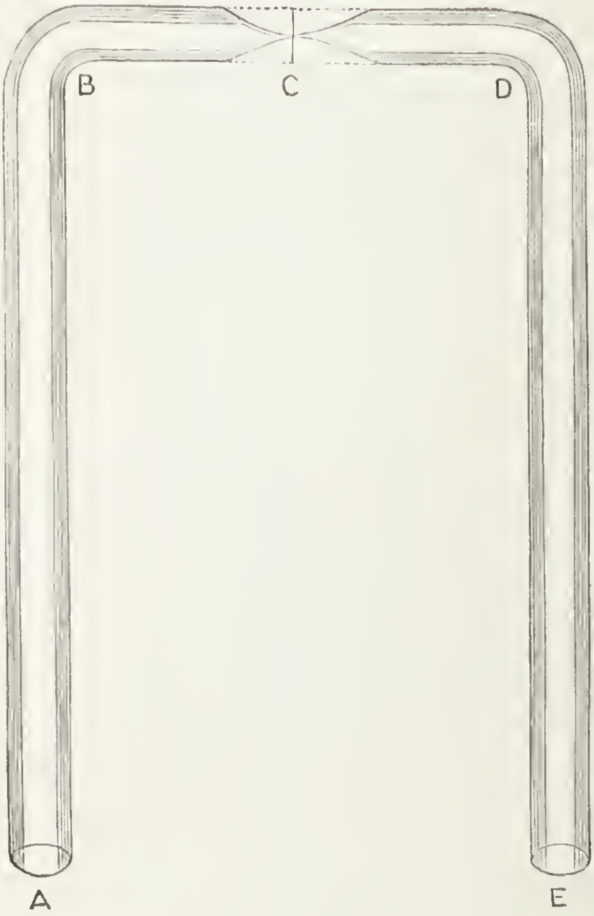
EGG-DRILLS.

Brass blow-pipes may be had of all Natural History dealers for from 6d. to 1s. Those usually sold do excellently for all eggs larger than a partridge's; but for smaller eggs a glass blow-pipe with a very fine orifice is better. These also can be obtained for from 6d. to 9d. from most naturalists, but they are easily made



METAL BLOW-PIPES.

at home in the following manner. Take a piece of same glass tube 16 inches in length and heat it in the flame of a Bunsen burner, or even in an ordinary gas-flame, at a point six inches from one end, until it becomes soft enough to be easily, though slowly, bent to form a right angle. The glass requires to be warmed very slowly at first, as it will crack and fly in all directions if put suddenly into a hot flame. Then similarly heat a point six inches from the other end and bend again at a right angle. You will then have your piece of tube bent into this shape, the two ends A to B and D to E being each six inches in length and the middle portion B C D four inches. Then heat the tube at the point marked C, until the glass becomes quite soft, when by gradually pulling B and D apart the glass becomes attenuated and drawn out at C, until it finally parts. You then have two blowpipes with very fine orifices—so fine, indeed, as to be almost hair-like if skilfully made. The mouthpieces A and E may be rounded and smoothed, and thus prevented from cutting the lips, by being held for a minute or so in the hottest part of the flame.

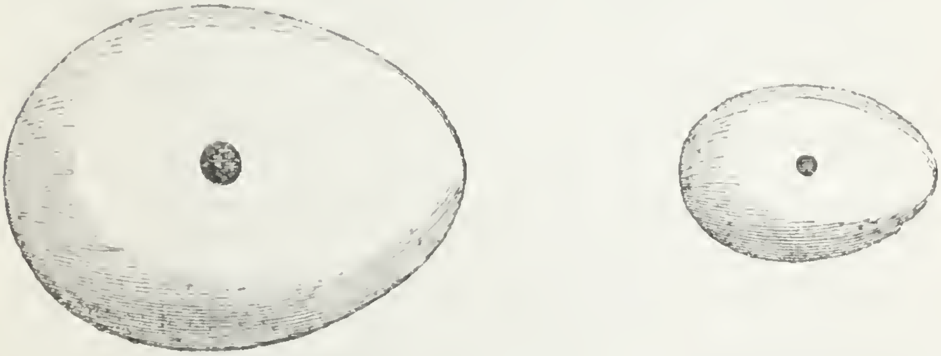


GLASS BLOW-PIPES.

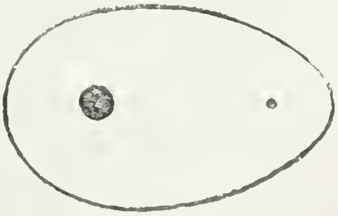
The solution of corrosive sublimate may be obtained from any chemist. It should consist of six grains of corrosive sublimate to an ounce of rectified spirits of wine, and should always be kept in a bottle distinctly labelled

" Poison," as it is a most deadly poison. Almost any kind of syringe may be used, so long as it is capable of being worked with one hand. An ordinary penny squirt is very efficient, and I have seldom used anything else. It can, after a little practice, be used with one hand, by inserting the forefinger in the ring. A syringe of lighter and better make, however, with a ring large enough for the insertion of the thumb, is of course preferable. An india-rubber syringe is also a very good kind. Having thus spoken of the needful instruments, we will proceed to the method of using them.

Take the egg to be blown in your left hand, and, having selected the side opposite to that you wish to expose in your cabinet, puncture it with a fine needle. Then, holding the egg over the bowl of water, insert the point of a drill of suitable size into the puncture and rotate the point more or less rapidly by "twiddling" the drill between the finger and thumb. In a short while a neat round hole will be formed. This should *always* be in the centre of one side of the egg and *never* under any circumstances at either end; for if drilled at one end, it is impossible accurately to ascertain the exact dimensions This single hole will allow of the egg being blown as easily as by the old and barbarous practice of drilling two holes, one at each end. If any collector still prefers to make two holes, let them both be made on one side, as shown below, so that the egg may not be spoiled as a specimen. This done, take the tweezers, or a very fine



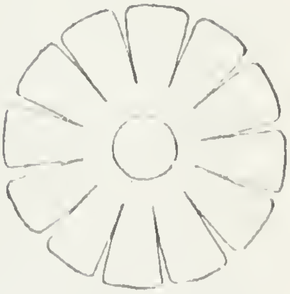
SHOWING PROPER POSITION OF HOLES.



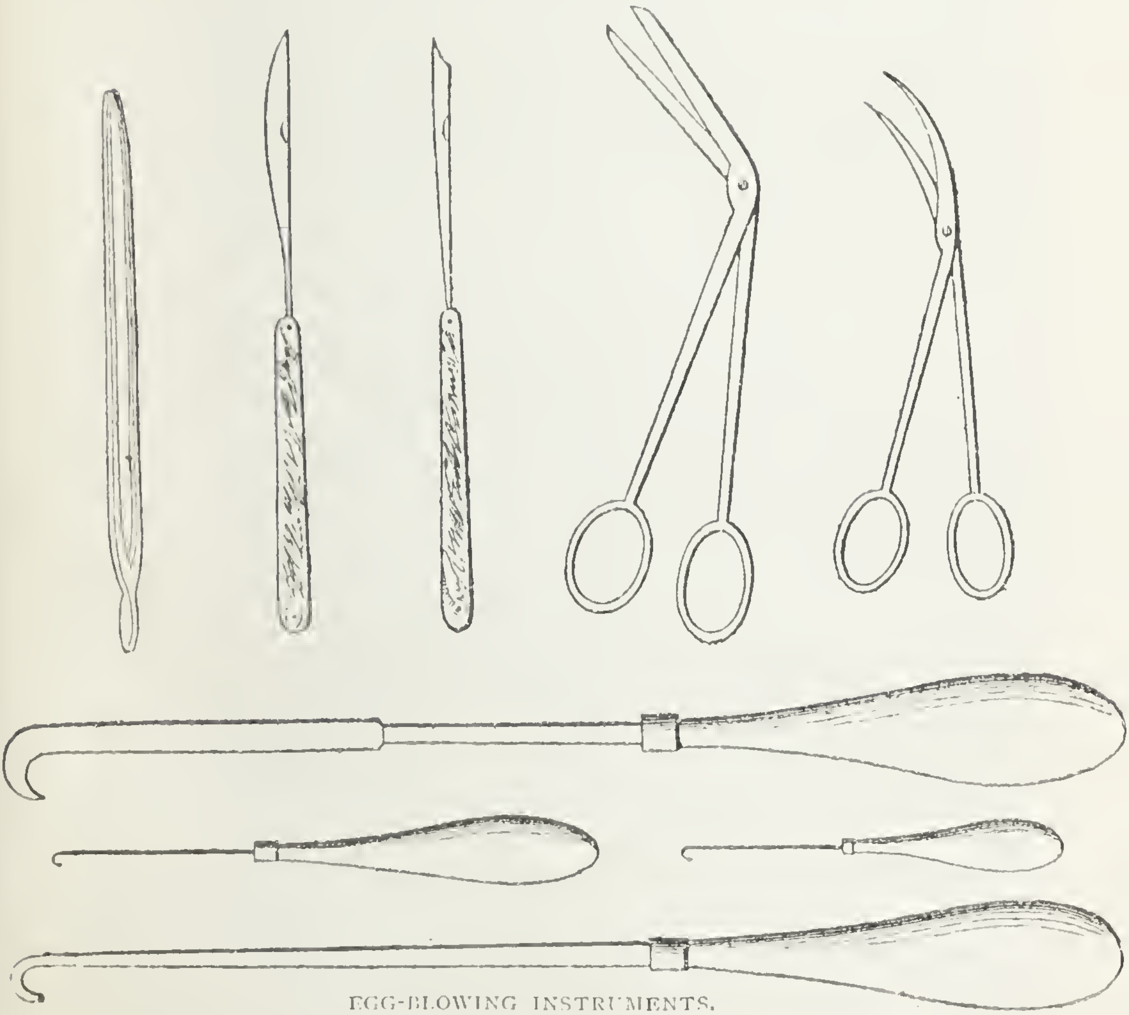
LESS DESIRABLE POSITION.

knife, and carefully remove all traces of the fringe of the inner membrane which will be seen to surround the hole. The contents are very much more easily expelled if this be done. Then, still holding the egg over the bowl of water, and with the hole downwards, place the orifice of a blow-pipe of suitable size just at the edge of the hole, so that the stream of air will enter the egg, and blow. If the egg be fresh, the contents will quickly begin to "fizzle" out. If the contents be found not to flow very freely, a little water may be injected and the egg shaken, when the contents will generally be found to be easily expelled. In the absence of a proper blow-pipe, a straw or grass-stalk will be found to be a tolerable substitute. When the contents of the egg have been removed so far as possible by this means, the shell should be filled with water by means of the syringe and well shaken, after which the dirty water should be expelled by the blow-pipe. The egg-shell should then be similarly filled with corrosive sublimate, shaken and again emptied. The use of corrosive sublimate in this manner, was first suggested by Waterton, who intended it to "cure" the inner membrane of the egg, which, by decaying, causes the rusty spots so often seen on old eggs. For similar reasons, it is very necessary, so far as possible, to remove all internal membranes at the time of blowing the egg. Professor Newton writes: "It is always advisable, as far as possible, to avoid wetting the outside of the shell, as the action of water is apt to remove the 'bloom,' to affect the colour, and in some cases to alter the crystallization of the shell." After being emptied, the shell should be shaken, to remove any water from the interior, dried with a fine cloth or rag, and placed, hole downwards, to drain on a pad of blotting-paper. At this time, it should be kept from the light, as the colours are liable to fade.

The foregoing plan will be found to answer very well in the case of fresh eggs, but a different method must be employed in the case of eggs which are hard-sat. The blow-pipe must then be laid aside and a larger hole drilled than would otherwise be done. The shell must then be strengthened round the hole by the gumming on, one over another, of eight or ten pieces of paper cut in the shape shown below. Each should be put on with thick gum, which should be allowed to dry before another paper is added. The slits in the edge allow the papers to set pretty smoothly. The hole in the middle may be cut out first, or the different layers of paper, and the shell, may all be drilled through at once, when the gum has dried. This being done, small scissors, knives, and tweezers, such as those shown below (which are obtainable at most surgical instrument makers) may be introduced with care, and the embryo may then be cut up and extracted in small pieces. After the operation, a little warm water will speedily remove the papers, which may then be dried for use another time.



SHAPE OF PAPER STRENGTHENER.



EGG-BLOWING INSTRUMENTS.

Authentication is, says Professor Newton, "the most important duty of an egg-collector, next to identifying his specimens." It consists, he says, in marking them in some manner, and on some regular system, that will leave no doubt, as long as they exist, of their having been obtained by him, and of the degree of identification to which they were subjected. In all respects, the best method of doing this is to write in ink with a fine quill on the egg-shells themselves. The egg is thus indelibly marked, and is authenticated as long as it exists. Some collectors have a great aversion to this plan, but the statement may be safely made, that these are collectors, rather than naturalists, since no other equally good method of authenticating eggs is known. Paper labels cannot be securely affixed. They quickly become loose, and, getting mixed, prove worse than nothing at all; they are also unsightly. The amount of information written upon the egg varies, of course, according to the amount of space available. Thus, if a collector manages legibly to inscribe on (say) the egg of a wren (*a*) the scientific name of the species, (*b*) the locality, (*c*) the date, and (*d*) his initials (which are the four most essential items), he will do well. But on the egg (say) of a ring dove, much more may be added. In this case, the English name, the number in the clutch, a reference to the collector's note-book, and some remarks as to the amount of identification the specimen was subjected to, may be added. The scientific name only need be used, and the generic name may often be abbreviated. The inscription should, of course, always be upon the same side as the hole, and confined within the smallest possible limits. Eggs should never be written upon until perfectly dry, or the ink will run. It is difficult to write on many species of eggs that have very shiny shells. It will then be found easier to print the letters, and a little plaster of Paris rubbed on beforehand will sometimes facilitate matters. Some eggs with very chalky shells, as, for instance, those of the gannet, cormorants, and grebes, may be marked by being scratched with a sharp needle. Eggs of the grouse may sometimes be authenticated in the same way. Dark eggs often require to be marked with a little white paint, laid on with a fine brush. Another plan, (though a less satisfactory one) is to keep each clutch separate in a sealed glass-topped box with the necessary information written outside. In every case, however, where possible, the information should be actually inscribed on the egg itself. A mere number on the egg, referring to some entry in the note-book, is often useless, as the note-book may easily be lost, or may become separated from the specimen.

The storage and display of eggs in the cabinet is the last branch of the subject demanding notice. There is, of course, no plan better than the usual one of keeping the specimens in shallow drawers in cabinets. Cabinets of all sorts and sizes can be obtained from any professional naturalist, or may be made to order by any cabinet-maker. The drawers should be of different depths, and it will be found a great convenience if the larger ones are multiples of the smaller ones in respect of depth, so that they shall be interchangeable at will to suit the different sizes of the eggs. The doors of the cabinet should be so constructed as to entirely exclude both light and dust. The latter may be kept out by using small rubber tubing, which becomes compressed with the shutting of the door. The drawers should be eighteen inches or two feet square, so as to hold as large a number of specimens each as possible. They should be divided longitudinally by thin strips of wood, half an inch to an inch or more in height, placed at varying distances apart according to the species of egg to be accommodated between. The bottom of the drawer, between the strips of wood, should be covered with cotton-wool. There should also be between the strips of wood some sliding partitions to bear the labels separating the species. A very good plan is to keep each clutch, or each species, in a card-board box with a glass top. These, if made in multiples of one another, can be very neatly fitted into the drawers. The very worst possible ways of displaying eggs are threading them on a string, and gumming them on cards. No one having the slightest pretensions towards being a naturalist, will ever adopt either of these methods.

In packing eggs to go by post, each specimen should be wrapped separately in a piece of cotton wool, and packed in a strong box (*not* of card-board) with more wool between each. The worst possible method of packing is in bran or sawdust. When either of these materials are used, the specimens invariably gravitate either to the bottom or top, and are broken by contact with one another, or with the inside of the box containing them.

BIRD-SKINNING.

It having been thought that a few brief directions how to remove and preserve a bird's skin would be found useful by many young oölogists and others, I append the following remarks upon the subject. It does not appear necessary in the present place, to give any hints as to the best means of snaring, trapping, shooting, or otherwise collecting birds for the cabinet.

The skinning of a bird is a comparatively easy, and more or less a mechanical, operation. Almost any one who possesses a tolerable dexterity of hand and finger may acquire all the skill needed from the following remarks alone, although of course it is better to obtain further information from some more complete work upon the subject, such as Mr. Montagu Browne's "Practical Taxidermy," and far better still to obtain practical instructions from some skilled taxidermist. Many professional naturalists are glad to give lessons in Taxidermy for from a few shillings to half a guinea each. I have, in what follows, confined my remarks to Bird-skinning only, and have not touched upon the more difficult subject of bird-stuffing, for several reasons. In the first place, specimens of birds intended for scientific purposes are now-a-days never stuffed, but simply preserved as skins, on account of the saving of space, and of the much greater convenience when examining comparing them. Moreover, the proper stuffing and mounting of a bird is a tedious, and often a difficult, operation, requiring a considerable amount of previous knowledge of the habits, attitudes, and life-histories of the species, and no slight artistic taste and skill.

Those who desire to become proficient in stuffing and casing birds, had better take lessons from some professional. But learning to stuff birds is very like learning shorthand, inasmuch as only a very small proportion of those who begin—only two or three *per cent.* probably—have patience enough to become really proficient. The skinning of a bird is, however, as has been said, largely a mechanical process, and is comparatively easy of acquirement as a result of practice ; and, when once a bird is skinned, the skin may be kept and mounted at any time, although, as a matter of fact, a dry skin can never be mounted quite so satisfactorily as what is technically known as "a green skin."

Before proceeding to describe the actual process of skinning, it is necessary to remark that specimens generally require a certain amount of attention in the field. We will suppose that we have shot a starling, which is in all respects the best bird for a fresh hand to start upon, on account of the toughness of its skin and the firm insertion of its feathers. Thin-skinned birds, with very loose and fluffy plumage, such as the owls and pigeons, and very small birds, such as the wrens and tits, are the most difficult to a beginner, although after he has acquired practice he will find the small birds among the easiest to do. Our starling, however, is not quite dead ; blood is running from its mouth, and clots of blood are soiling the feathers on its breast. Taking the bird in the hand, the fingers are placed on one side of its breast and the thumb on the other, beneath its wings. A little sharp pressure, sustained for half a minute or so, will then speedily cause the bird to die from asphyxiation. Stuff the mouth tightly full of cotton wool, and flick as much blood as possible from the plumage, either with a piece of stick, a knife-blade, or a bit of cotton wool. Then roll the bird in paper and lay it in your satchel or basket. The pocket is not a good place to carry birds "in the flesh," as it is called.

The implements you will require for skinning a bird must next be mentioned. These are simple and cheap in the extreme. Do not be alarmed at the cost of the cases of instruments offered by professional naturalists at from 10s. 6d. to 15s. These, though certainly useful, are by no means essential. I have, when abroad, often skinned birds successfully with nothing but my pocket-knife, fingers, some arsenical soap, and a sheet of newspaper, though this has, of course, been from necessity and lack of the proper implements, rather than from choice. The following, however, are the chief requisites :—a pocket-knife with a small blade, or a strong surgical scalpel, a couple of pairs of strong pointed scissors of two sizes (ordinary nail-scissors are excellent for the smaller of the two), some tow, some cotton wool, a couple of small brushes (one an ordinary penny gum-brush, the other a house-painter's brush of small size), a few needles, some thread, a tin of arsenical soap, some plaster of Paris, some fine hard-wood sawdust, and a few sheets of newspaper. With these, one has practically a complete skinning outfit, though other articles may be added. The sawdust should be the finest, sifted, hard-wood sawdust obtainable. It may be purchased at an extremely small cost from most fret-workers and upholsterers. The arsenical soap can usually be procured from any taxidermist, but it is not always of good quality. The following is given as a good recipe for its preparation. Take

White soap	1½ lb.
Arsenic	1 ,,
Salts of tartar	8 oz.
Camphor	4 ,,
Powdered chalk	2 ,,

Shred the soap very finely into a pot (which should never be used for any other purpose), and add as little water as will dissolve it, stirring gently over a slow fire. When well dissolved, add the chalk and salts of tartar, and mix thoroughly. Take it off the fire and add the arsenic slowly, stirring meanwhile. Pound the camphor in a mortar with spirits of wine ; add it, and mix the whole thoroughly. It should then be poured into small tins and left to set. The tins should be kept under lock and key, as the mixture thus made is a most *deadly* POISON. In using, the soap should be worked up into a good lather with the brush, before being applied to the skin.

Now, having all things needful ready and to hand, take your specimen and lay it on the table before you, upon a sheet of newspaper spread out for the purpose. The first thing to be done is to weigh the bird, and to measure its exact length from the tip of the bill to the tip of the tail, and the expanse from the tip of one wing to the tip of the other when both are spread. These particulars should invariably be entered into the observer's diary. Then re-plug the throat with cotton wool, likewise the vent and nostrils. Then pass a thread through the nostrils and tie up the beak, leaving an inch or two of thread remaining, as this will often be found convenient to hold the bird up by. You are now ready to begin the actual work of skinning.

But it will often happen that at this stage the specimen presents such a bedraggled appearance, and its plumage is so stained and matted with blood, that the young ornithologist feels utterly disheartened. This is especially likely to be the case with gulls, terns, divers, ducks, and other birds having full, white breasts. But there is no reason to feel discouraged. Unless the bird has been much mangled by the shot ("dust-shot" will kill any bird not larger than a starling), no damage has been done that a little patience and care will not set right. Blood should be cleaned off with a small piece of sponge and some hot water. The sponge should be used as dry as possible; should be frequently squeezed out; and should, of course, only be used in the direction of the feathers. In a little while the plumage will become fairly clean, when all moisture should be removed from it, as far as possible, with the dry sponge. Then, taking a large needle or piece of stout wire, and lifting up the wetted feathers, scatter dry plaster of Paris plentifully upon the spot and beat it smartly and rapidly with the wire. Raise the feathers from time to time with the wire, and add more plaster of Paris, beating vigorously all the while. In a few minutes it will be found that the powder may be brushed off or beaten out, either with a duck's wing or a hare's foot, leaving the plumage almost as clean as if it had never been soiled.

This done, there is nothing further to prevent your beginning the actual work of skinning the starling. Turn it upon its back, with its head towards you, and open the feathers along the centre of the breast and stomach, where you will find a large bare space. Make an incision along the central line of the body, from about the middle or the lower end of the keel of the breast-bone to the vent. This should be done with great care. On the breast you may cut deeply, but on the stomach it is necessary to exercise the greatest care not to cut deeper than the outer skin, or the cavity of the stomach will be entered, and the entrails will fall out, and seriously soil the feathers. Next skilfully pick up one edge of the skin between your thumb and fingers, and with the point of your knife (the sharp edge being held away from the skin), the handle of your scalpel, or your fingers (if the bird be large enough), gently separate the skin from the flesh. Do this by pushing the two apart, and by working with the knife-blade or handle of the scalpel, rather than by pulling, or the skin will be stretched out of shape, if not torn. Skin as far as you can reach on this side without unduly straining the skin. You will find yourself able to reach from near the tail to a good way up the breast, and down the side as far as the insertion of the leg. Then turn to the other side of the bird, and skin down it in a precisely similar manner as far as you are able. During all this time, you should have been freely applying pinches of plaster-of-Paris or sawdust—the former if it is a very small bird, the latter if it is one larger than (say) a tomtit. These materials cannot well be used too freely in skinning a bird, especially if the bird be fat and oily, as many are, especially waders; they soak up the oily and sticky matter naturally pertaining to the bird's body, and prevent it soiling the feathers; their use also prevents the skin clinging again to the flesh from which it has been separated, and enables the operator to hold the various moist, greasy pieces of flesh and bone securely, and without danger of their slipping from his fingers. Nothing but actual experience can fully show their great use. Although most taxidermists use only plaster of Paris in all cases, it is, considering the great superiority of sawdust for most purposes, surprising the latter is not more used. Plaster always cakes more or less on the skin and feathers, and it soils the fingers in a very unpleasant and inconvenient manner; but sawdust, while equally good as an absorbent, does neither.

Now seize the leg between the fingers and thumb of one hand, on the outside of the skin, and push it inwards towards the body, pushing the skin downwards off it, as though it were a glove, with the finger and thumb of the other hand, which should be inserted within the skin. This cannot be done fully until the leg bones have been severed with the scissors at, or a little below, the second joint. The flesh of the leg should then be cut with the knife or scissors, so that the leg is completely severed from the body, and is held on merely by the skin. This operation requires care, or the skin will be cut also. Next skin as far as you can reach down the side of the bird, and over the thigh, applying either one or other of the absorbents continually. Then turn your bird, and treat the other leg similarly, afterwards pulling both legs gently, by the foot, back into their places, and leaving them there. The severing of the vent and tail next requires attention. This, to a beginner, is by no means easy. Taking up the knife, carefully work down towards the tail, and round the back as far as you can with ease and safety. Be careful not to tear the skin by straining it. Now turn the bird's tail towards you, and raise the bird till it rests only on the head, by placing the left thumb on the lower part of the back (which is, of course, now underneath), the fingers of the same hand being placed on the under side of the roots of the tail (which is now uppermost), and used to hold back the edges of the skin on either side. Then cautiously insert the knife below the vent, and, cutting upwards, free the edges of the skin from the vent. Next cut away and skin with great care down to the roots of the tail, and when the bone (the last caudal vertebra) is laid bare, slip the knife or scissors under it, and, by a sharp cut upwards, sever the tail from the body. Be very careful not to cut the roots of the tail feathers, or they will all drop out. This done, turn the tail back, and skin up the back of the bird. It requires great care not to cut or tear the skin on the lower part of a bird's back, as it is extremely thin and tender at that point. Now seize the bottom part of the loosened body with the left hand, and, by pushing with the finger-nails and occasionally using the knife, skin up the body all round, turning the skin completely inside out, so that the tail passes over the head. This will be found much easier to the beginner if, before this stage is reached, he breaks the bone of each wing as close to the body as possible. There are, however, objections to doing this, and practice will quickly show how it may be avoided.

Continue to skin on up the body until the place where you have broken the wings appears. Then, with the scissors, cut the flesh of the wings until they are completely separated from the body, and only adhere by the skin, like the legs. All this time you must have been applying pinches of the absorbent freely. Now, taking the body in one hand, continue skinning up the neck, still turning the skin inside out. This will be found a very easy part of the operation, but it must on no account be done by pulling, or the skin (which is bare of feathers and very thin on the sides of the neck) will be torn or stretched. *Push* the skin up the neck instead of pulling, and use plenty of plaster-of-Paris. You now arrive at the base of the skull, but this, with most birds, will not prevent your continuing to skin on in the same manner, though greater care is required, or the skin is easily burst in passing the head through the neck when inside out. A little practice, however, will enable the operator easily to accomplish the operation, except in the case of certain species, to be spoken of hereafter. Soon after the base of the skull is passed, progress will be stopped by the insertion of the ears on each side. The fine tubular membrane of the ears may be cut with a knife as near to the skull as possible, but a better plan (with small birds, at least) is to scatter a little plaster on and then scratch it with the finger-nail, when the ear-tube will come away from the skull intact. You can now continue to skin on a short distance further, when you are again stopped by the eyes. To pass these, requires great care, especially in the case of a beginner. The knife must be drawn gently across the eye-ball, in such a manner as to separate the external eyelid from the inner membrane. The exact manner in which this should be done, cannot easily be explained, but it can soon be learned by practice. Having passed the eyes, skin until the appearance of the base of the bill tells you you can go no further in that direction. Next, with your knife, cut completely off a sufficiently large portion of the lower and hinder part of the skull to expose the base of the brain. The body, neck, and base of the skull, now separated from the skin, should be laid aside for the present, but not thrown away. The skull still remains attached to the skin, which you have now turned completely inside out from the roots of the tail to the base of the beak, and the greater part of the operation of skinning is over. The skin, however, still requires to be cleaned and poisoned, before it can be "made up." There are, however, as stated above, some birds with which it will be found impossible to turn the head inside out through the skin of the neck, as described above, and a word or two as to these is here required. The birds in question are the ducks, the woodpeckers, the parrots, some species of grebes and divers, and a few others. With these, of course, a different method has to be adopted. When you have skinned as far up the neck as you find yourself able, cut the neck off and proceed to finish the legs, wings, tail, and the interior of the skin generally, as directed hereafter, leaving the head to be dealt with later on. When ready to attend to it, make a longitudinal incision, sufficiently large to admit of the passage of the head, down the back of the head and neck. Then clean the skull, as hereafter described, and return it to its place, afterwards neatly sewing up the incision.

It will often be found very convenient, especially with large birds, if the operator, after he has skinned round the tail, and is working up the back to the head, has some hooks ready to stick into the body of the bird to hold it, as the work of one hand is thereby entirely saved. It is, in fact, as though the operator were possessed of three hands instead of two. The hooks should be held in position by means of strings, fastened either to the ceiling or the table. The length of these strings may, of course, be altered at will.

We will now return to the skin of our starling, which we left turned inside out, ready to be cleaned. In the first place, remove the eye-balls, taking great care not to burst them, or the watery humours they contain may seriously soil and disfigure the plumage. The best way of removing the eyes is to dig them out with the points of a pair of scissors slightly opened. Next take the skull in the left hand, and, with the scissors, by means of a couple of snips, cut away the entire base of the skull or upper part of the palate, between the mandibles, but be careful not to interfere with the articulation of the lower jaw. This will lay bare the base of the brain, which should be removed by the point of the knife or scissors, or by a small scoop kept on purpose. Next clean the skull of any fragments of flesh that may still adhere to it. Now return to the wings, which have not yet been cleaned. Taking hold of the severed bone, pull it gently, and after applying plaster, work back the skin of the wing, turning it gradually inside out. With a little care, the bases of wing-feathers may be separated by the thumb-nail from the bone, and the whole skin of the wing turned inside out, when all flesh should be removed. Treat the other wing similarly. With large birds, it is not always easy or convenient to skin down the wing and turn it inside out. The wing may, instead, be opened by a longitudinal cut down the bone on the under surface of the wing, when the flesh between the ulna and the radius may be easily removed, the space being afterwards filled with cotton wool and the cut neatly sewn up again. Next, proceed to skin the legs, by taking hold of the head of the severed bone, pulling gently, and pushing the skin downwards with the thumb-nail and finger, exactly as you did with the wings. It is easy thus to skin the legs down to the joint, after which every scrap of flesh adhering to the bones should be removed. The base of the tail next requires attention. This should be carefully cleared of any scraps of flesh adhering to it, by scraping and cutting. Finally, remove from the skin, by scraping or scratching with the finger-nail or knife-blade, any scraps of fat or flesh that may still be sticking to it. With some birds, such as ducks, divers, grebes, and puffins, this final cleaning of the skin will prove a tedious operation, involving much scraping and cutting. The skin is now completely cleaned, and ready to be poisoned and made up.

First of all, apply a little water to your arsenical soap and work the surface up into a good lather with the brush. Then take up the skull and anoint it freely inside and out with the soap. Then chop up some tow into short lengths and ram it firmly into the skull. In each eye-orbit place a small ball of cotton wool, but never place this material in the skull, as it is impossible to pass a pointed wire through it when tightly compressed, and thus you would be prevented from mounting your skin, should you ever desire to do so. Next anoint the bones and inner side of the skin of the wings freely with the soap ; wrap a small amount of tow around the bones ; tie the bones of the two wings nearly together (of course inside the skin) by means of strings previously attached ; and then turn the skin of the wings right-side-out again by gently pulling the tips of the wing-feathers with one hand, and by assisting the passage of the bone back into the skin, with the other. Then similarly anoint the bones and inner surface of the skin of the legs ; wrap with tow, and replace the leg by pulling gently at the foot. Next proceed to dress the inside of the skin of the head and neck well with the soap, taking care that none passes through the eye-holes, or it will soil the feathers. Then anoint the whole of the inner surface of the skin, especially about the roots of the tail, with the soap, and the skin will be ready to be turned right-side-out once more. It is a good plan, when thus dressing a skin with the soap, to dab on pieces of cotton wool, or to sprinkle the parts that have been anointed thickly with sawdust (especially those parts of the skin nearest to the incision), as by so doing the paste is prevented coming off again, and soiling the feathers, which otherwise almost always take some injury from it.

Now turn back the skin right-side-out by taking hold of the skull and pushing the beak back down the neck, taking every care that the point does not pierce the skin in its passage. To pass the skull back through the skin of the neck without bursting the latter, requires some care. When the skull has been passed back through the neck, a few gentle pulls in various directions, and a few sharp shakes will cause the skin to fall into shape again, right-side-out, with all the feathers in such perfect order (if the skinning has been tolerably well done) as will surprise the young beginner. Fresh hands generally commence with the idea that it must be exremely difficult ever to re-arrange the feathers smoothly after the apparent muddle they have been in during the process of skinning. Young beginners, too, generally hold the belief at first, that an animal must be so much easier to skin and stuff than a bird, on account of the absence of feathers, but this is a complete delusion.

All that now remains to be done, is to "make up" the skin. Make a small neck of tow and introduce it into the skin, pushing one end right up to the base of the skull with a blunt piece of stiff wire. Next make a tightly-packed body of tow, as nearly as possible of the same size and shape as the body taken out, and tightly bound round with numerous turns of fine cotton to keep it firm and in shape. Then take a piece of soft iron wire (for a starling this requires to be about one foot in length) and sharpen one end into a fine point with a file. Then pass it through the body, from back to front, and clench the short end projecting at the back firmly into the imitation body. Then pass the long pointed end up the neck and slowly bore it right through the skull and the tow with which it is filled, so that it projects on the bird's forehead, over and between the eyes. Run the wire through until the imitation body falls into its proper place in the skin, and, adjusting the neck to its proper length (remembering that the tendency of beginners is to make it too long), cut the wire off short on the crown with a pair of wire-cutters or strong scissors. Fill in a few scraps of tow around the artificial body wherever required, and neatly sow up the incision made down the breast, taking care not to draw in any feathers. Having done this, cut off with a pair of scissors any ends of tow which may project between the stitches. Then see that the wings are properly adjusted into their places, especially at the shoulders, which beginners may find a little difficult at first. Next carefully arrange and smooth the feathers, which may be done most easily with a large needle and a hare's foot.

It will be found a very good plan at this stage to introduce the head of a large needle between the skin of the head and the skull, through the eye-holes, and to move it about a little whilst there. This will have a surprising effect in causing the feathers of the head to arrange themselves smoothly in their places. Finally, press and squeeze the skin into an easy and natural shape; cut a narrow band of paper and fasten it with a pin round the skin, so as to keep the wings in position; cross the legs and tie them together; and, when you have labelled your skin, put it away on some shelf for a week to dry. You will then have a skin which can be mounted, if desired, by an experienced taxidermist at any time.

The method of skinning described above, is the one employed by taxidermists in the great majority of cases; but with certain kinds of birds, and under certain conditions, it is necessary to follow a somewhat different process. This consists in skinning from under the wing, instead of from the breast. Thus, with any bird that has been seriously mutilated on one side—say has had the wing almost torn off by the shot—it is absurd to spoil the skin further by making another incision elsewhere. But this process should invariably be followed in the case of birds with full, white breasts, such as the ducks, divers, grebes, gulls, terns, and most plovers and wading birds. It often ruins the appearance of these species to cut them down the breast, as the white feathers become soiled by the grease from the body. The incision should be made under, and as near to, the wing as possible, but the method of skinning is, in all other respects, practically the same as that already described, although perhaps not quite so easy for a beginner. The wing-bone should be cut first of all; then the leg-bone; and the operator should then proceed to skin round the shoulders, cutting off the neck and leaving it to be attended to later. Thus the operation is commenced from the opposite end of a bird's body (the front or the shoulders), the tail being left until the last.

The beginner will usually find that it takes him an hour or more to make a tolerable skin, but with practice he will find that he is able to make a much better skin in (say) twenty minutes.

One word, in conclusion, as to labelling. This is a very important matter, and should on no account be neglected or done carelessly. A skin that is not properly labelled is of no value whatever from a scientific point of view. The next thing, therefore, is to determine the sex. Cut the abdomen open, and push aside the intestines until the backbone is visible. Lying close against it, and on either side, will be seen, if the bird is a male, two whitish oblong bodies (the testes) which are very large during the breeding season, but quite small at other times. If the bird be a female, the ovaries—a collection of small globular bodies, resembling somewhat a miniature bunch of grapes—will be seen occupying the same position. These also are much larger during the breeding season than at other times. If the bird be young or badly mutilated by the shot, it is often difficult to ascertain the sex satisfactorily, and it should then be marked on the label as doubtful. The sex should be indicated thus : ♂ for a male, and ♀ for a female. All but very small collectors will find it to their advantage to have proper labels printed. The following is a very good model, those words only being printed in that are shown in Roman type, the rest of course being left blank.

Sp. *Sturnus vulgaris.* ♀ *Immature.*
● Loc. *Chignal St. James, Chelmsford.*
Date. *Feb.* 10*th*, 1888. | No. *189.*

Remarks. *Bill, slaty-blue ; legs, brown ;*
irides, dark brown ; beetles in giz. ●
Coll., Miller Christy.

The above of course shows the two sides of the label, which should be affixed to the legs.

THE WILD BIRDS PROTECTION ACTS, 1880 AND 1881.

It will be a great convenience to those engaged in collecting birds for scientific purposes, to have before them a short and condensed statement of the amount of legal protection, which Parliament has given to our wild birds. The following concise summary of the chief provisions of the "Wild Birds Protection Act, 1880" (43 and 44 Vict., cap. 35), as amended by the explanatory Act of 1881 (44 and 45 Vict., cap. 51), is, therefore, introduced.

§1. Relates to the title of the Act.

§2. The term "wild birds" includes ALL wild birds, and the word "sheriff" includes his substitute.

§3. Any person who *between* March 1st and August 1st (*i.e.*, from March 2nd to July 31st) in any year, knowingly and wilfully shoots or *attempts* to shoot, or uses any boat for the purpose of shooting or causing to be shot, *any* wild bird, or uses any [bird-] lime, trap, snare, net, or other instrument for the purpose of taking any wild bird, or exposes or offers for sale, or has in his control or possession after March 15th, any wild bird recently killed or taken, shall on conviction pay a penalty not exceeding £1 for every bird (included in the annexed Schedule) in respect of which an offence has been committed, and shall, in the case of any other wild bird (*not* included in the Schedule), be reprimanded and pay costs for a first offence, and for every subsequent offence shall pay a penalty not exceeding 5s. and costs, unless such person can prove that the bird or birds in question were lawfully killed, taken, or received during the lawful time of year, or imported from some place to which this Act does not extend ; but this section shall *not apply* to the owner or occupier of any land or any duly authorized person, killing or taking any wild bird, *not* included in the Schedule, on such land.

§4. Any person found offending against this Act who refuses to give his correct name and address when desired so to do by any person, shall be liable, on conviction, to pay a penalty not exceeding 10s., in addition to any penalties imposed under section 3.

§5. Relates to the manner in which offenders are to be prosecuted.

§6. Provides that offences against this Act committed within the jurisdiction of the Admiralty (*i.e.*, on the high seas) shall be punishable exactly as if committed upon land ; and, when any offence is committed upon waters bounding any two countries or other judicial districts, it shall be punishable in *either*.

§7. Directs that the Act should come into force on January 1st, 1881, on which day the "Sea Birds Preservation Act, 1869," the "Wild Birds Protection Act, 1872," and the "Wild Fowl Preservation Act, 1876," were thereby repealed.

§8. Empowers one of the principal Secretaries of State in Great Britain, or the Lord-Lieutenant in Ireland, to vary the close-time in any county upon application from the justices in quarter sessions assembled.

§9. Makes similar provisions for the exemption of any county, or part of a county, from the operation of this Act, and directs that the Act shall not extend to the island of St. Kilda.

SCHEDULE.

American Quail
Auk
Avocet
Bee-Eater
Bittern
Bonxie
Colin
Cornish Chough
Coulterneb
Cuckoo
Curlew
Diver
Dotterell
Dunbird
Dunlin
Eider-Duck
Fern-Owl
Fulmar
Gannet
Goatsucker
Godwit
Goldfinch
Grebe
Greenshank
Guillemot
Gull (except Black-backed)
Hoopoe
Kingfisher
Kittiwake
Lapwing
Lark
Loon
Mallard
Marrot
Merganser
Murre
Nighthawk
Nightjar
Nightingale
Oriole
Owl
Oxbird
Oyster-catcher
Peewit
Petrel
Phalarope
Plover
Ploverspage
Pochard
Puffin
Purre
Razorbill
Redshank
Reeve
Roller
Ruff
Sanderling
Sandpiper
Scout
Sealark
Seamew
Sea-parrot
Sea-swallow
Shearwater
Sheldrake
Shoveller
Skua
Smew
Snipe
Solan-goose
Spoonbill
Stint
Stone-curlew
Stonehatch
Summersnipe
Tarrock
Teal
Tern
Thick-knee
Tystey
Whaup
Whimbrel
Widgeon
Wild Duck
Willock
Woodcock
Woodpecker

The chief points requiring attention in this Act, or rather in these Acts (though it is directed that they "shall be construed as one"), are that *all* birds receive protection during the close-season, although there are two classes of birds which are protected to a different extent, namely, (*a*) those not included in the Schedule, which may be killed if desired at any time by the owner or occupier of any land or any person duly authorized, but by no other person, on such land, and (*b*) those birds *included* in the Schedule, which may not be killed by any person whatsoever during the close-season. The *attempt to kill or take* (*i.e.*, *catch*—not necessarily kill) is, under this Act, an offence exactly equivalent to the actual killing or taking. A fortnight's grace is allowed after the commencement of the close-season, for the sale of birds legally killed before it commenced. It is observable that, notwithstanding a common belief to the contrary, eggs of birds (except game-birds) are not protected by this or any other Act, though young birds obviously are. All previous Acts for the protection of wild birds, namely, those of 1869, 1872, and 1876, are by this Act repealed, except, of course, those relating to game-birds. The Schedule is, perhaps, the least satisfactory part of the Act, inasmuch as most birds appear in it at least twice under different local or almost obsolete names. No provision is made in the Act, as is done in many foreign Acts, for the authorization of scientific men to kill scheduled birds solely for scientific purposes during the close-season. On the whole, although the Act in question may not be perfect, it is a very great advance on any of the previous Acts, and has now worked fairly well for some seven years.

BOOKS ON BRITISH BIRDS.

By far the best work on British birds which has ever yet been published is, in my opinion, Mr. Henry Seebohm's "History of British Birds" (1883-85). This work is in all respects the most scientific, most methodic, and most complete work on the subject in existence. The fourth edition of Yarrell's Standard "History of British Birds" (1871–1885), edited by Prof. Alfred Newton and Mr. Howard Saunders, must undoubtedly be given the second place—indeed in most quarters it is regarded as *the* standard authority. Montagu's "Dictionary of British Birds," edited by Edward Newman, though now somewhat out of date, is a thoroughly good book. The "History of British Birds" (1851–57), by the Rev. F. O. Morris, is, to a large extent, a compilation, and is not of great scientific value, but its handsome coloured plates have made it very popular. As regards eggs, the best work, so far as descriptions and information as to nesting habits are concerned, is undoubtedly Mr. Seebohm's; but, in spite of the great care bestowed upon the plates, these can hardly be considered superior to those in the late Mr. W. C. Hewitson's "Eggs of British Birds," the last edition of which was published in 1856. Hewitson's letterpress, however, is now quite out of date. The Rev. J. C. Atkinson's "British Birds' Eggs and Nests," though now also largely out of date, having been published in 1862, has been a most excellent little book of its kind, and has certainly done a great deal to popularize the study of ornithology. As regards the preserving of the skins of birds, many small works have been published. The best of these in all respects unquestionably is Mr. Montagu Browne's "Practical Taxidermy" (1884), a very complete work, which has now reached a second edition.

THE END.

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